Author tshingombe tshitadi

Curriculum assessment:

Title

Strategic Evaluation of Advanced Engineering Systems and Pedagogical Innovation: A Professional Audit of Dr. Tshingombe Fiston Tshitadi

Overview

Dr. Tshitadi's career integrates **electrical engineering**, **security systems**, and **education policy**, with a focus on 4IR readiness, curriculum innovation, and traceable compliance systems that support socio-economic development.

Scope

- **Engineering Systems:** AC/DC theory, transformers, motors, PLCs, SCADA.
- **Security Engineering:** Access control, forensic policing logic, infrastructure integrity.
- **Education Policy:** SAQA/DHET frameworks, NATED pathways, curriculum compliance.
- **Socio-Economic Development:** Parliamentary submissions, rural energy research, youth mentorship.

Abstract

A concise audit of a trajectory from TVET foundations to doctoral systems research. Emphasis on automation, nanotechnology, AI integration, and low-code solutions (VBA UserForms) that enable signal-driven, audit-ready technical education and resilient industrial practice.

Description

- **Academic Path:** NATED N1–N3 (St Peace College) → Master's & Doctorate (Atlantic International University).
- **Technical Competence:** Power systems, motor control, PLC/SCADA, diagnostic engines, DLT for secure records.
- **Research Contributions:** Modular learning signals; autodidactic "Copilote" methodology; innovation & discovery record keeping.
- **Policy Engagement:** Submissions to South African parliamentary portfolio committees on higher education, energy, and rural development.

Keywords

Engineering Systems • Security Integrity • Curriculum Policy • 4IR • PLC • SCADA • VBA • Logigram • Nanotechnology • AI • DLT • Compliance • Audit • Socio- Economic Development

Statement — Delivery Management System

A decentralized ecosystem using **VBA UserForms** and logigram logic to manage: student registration and transcripts; engineering diagnostics and trade readiness simulations; inventory and financial compliance; automated audit sheets and bilingual credential exports.

Information & Communication Skills

- **Technical translation:** Convert engineering detail into policy and compliance language.
- **Academic writing:** Thesis, research papers, portfolios of evidence.
- **Stakeholder engagement:** Parliamentary submissions, institutional correspondence, moderation templates.

Administration & Investigation

- **Administration:** Credential mapping, version control, inventory tracking.
- **Investigation:** Forensic policing logic, CCMA/Labour Court processes, complaint tracking.
- **Governance:** Tender documentation, bid compliance, socio- economic advocacy.

Advantages & Disadvantages

Advantages: modular, audit- ready frameworks; scalable low- code tools; integration of AI and nanotech for resilience. **Disadvantages:** cross- domain complexity; interoperability and standards alignment challenges; need for stronger data governance.

Data Analysis & Visual Basic Logigram

- **Data models:** Complaint → Ruling → Rehabilitation; Credential → Export → Audit.
- **Logigram logic:** Star- Delta motor startup flows, ATM simulation, PLC diagnostics, curriculum signal mapping.
- **Automation:** VBA diagnostic engines, compliance audits, curriculum dashboards and export routines.

Audit Conclusion

The portfolio demonstrates a coherent systems approach linking engineering practice to policy impact. To scale impact, prioritize **standardized schemas**, formal **data governance**, and interoperable interfaces across SAQA/DHET/QCTO and industry partners.

Bibliography (Selected Works)

- *Application Trade Discovery: Job Education Research Methodology, Operational Autodidactic Copilote Distance* (F1000Research, 2025).
- *Career Drawing Total Programming: Analysis, Design, Investigation* (F1000Research, 2025).
- Parliamentary submissions to South African Portfolio Committees (Higher Education, Mineral Resources, Agriculture, 2023).
- Thesis: *Rural Energy, Integrity Science, and Educational Frameworks* (Atlantic International University).
- Technical portfolios: VBA UserForms for diagnostics, compliance, and curriculum management.

I can convert this profile into a polished infographic- style HTML report with interactive charts and a timeline using the thematic percentages and competency matrix already outlined; reply **Yes** to proceed or specify any data points you want included.

Career Education Didactic Report

Author: Tshingombe Tshitadi Theme: Curriculum Assessment in Trade & Engineering Education

🕮 Overview

This report examines the integration of career education materials, award certificates, diplomas, prizes, and innovative didactic systems within trade and engineering education. It emphasizes curriculum assessment, learner evaluation, and audit-ready documentation.

📚 Scope

- Trade and engineering education at advanced levels
- Credentialing systems: certificates, diplomas, prizes
- Didactic materials: quizzes, evaluation rubrics, learner dashboards
- Innovation and invention recognition in wholesaler and technical contexts

📝 Abstract

Career education thrives when didactic rigor, credentialing, and innovation are combined. This report explores curriculum assessment frameworks, management systems, and audit principles to ensure transparent learner recognition and sustainable educational reform.

🎯 Purpose

- To evaluate career education materials and credentialing systems
- To design audit-ready certificates and diplomas
- To integrate innovation and invention into trade wholesaler education
- To establish transparent quiz and mark evaluation systems

🔑 Keywords

Career education, didactic report, award certificate, diploma, prize, innovation, invention, trade engineering, wholesaler, quiz, evaluation, curriculum assessment, audit, management system.

📄 Description

The report describes how career education materials can be structured into audit-ready frameworks, ensuring learners receive visible recognition through certificates, diplomas, and prizes. It highlights innovation in trade engineering and wholesaler systems.

⚠ Problematic

- Lack of standardized credentialing across trade education
- Limited recognition of innovation and invention in curricula
- Inconsistent evaluation methods and mark allocation
- Weak audit systems for compliance and transparency

📝 Statement Report

This report asserts that career education must integrate didactic rigor, credentialing, and innovation recognition to empower learners and align with regulatory frameworks.

📱 Management System Information

- Learner dashboards for progress tracking
- Digital credentialing systems (badges, certificates, transcripts)
- Audit-ready documentation aligned with councils and authorities

🔍 Principle Investigation

- Alignment of curriculum with regulatory standards
- Evaluation of innovation in trade wholesaler education
- Transparency in quiz and mark evaluation systems

Method Research

- Comparative analysis of credentialing frameworks
- Case studies of trade engineering education
- Surveys of learner and educator experiences
- Audit of management systems for compliance

✅ Advantages

- Transparent credentialing and recognition
- Motivation through prizes and innovation awards
- Audit-ready documentation for compliance
- Learner empowerment via gamified dashboards

❌ Disadvantages

- High administrative burden for audit systems
- Risk of over-standardization limiting creativity
- Resource-intensive management systems

📄 Management System Information (Expanded)

- Integration of LMS with credentialing dashboards
- Automated quiz banks and evaluation rubrics
- Secure audit trails for certificates and diplomas

📊 Conclusion

Career education in trade and engineering requires a balance of didactic rigor, credentialing, and innovation recognition. Audit-ready systems ensure transparency, while prizes and certificates motivate learners to achieve and invent.

💼 Audit

- Verification of certificate and diploma authenticity
- Compliance with national and international councils
- Continuous monitoring of learner progress and evaluation systems

📚 Bibliographic (Sample References)

- Council on Higher Education (CHE) guidelines

- Engineering Council of South Africa (ECSA) standards
- UNESCO TVET frameworks
- International Journal of Technical Education & Training

This structure gives you a **complete academic-style report** that can be adapted into curriculum assessment documentation, certificate design, or audit frameworks.

Would you like me to **expand this into a polished certificate/diploma template** (with placeholders for learner details, marks, and achievements), or into a **sample quiz bank with evaluation rubrics** to demonstrate the assessment system? Both would make this report more tangible.

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Based on 50 sources

ID	Title	Category	Associated Program or Tool	Author/Assignee	Source
904	Applications Design Lead	Engineering / Development	VBA frameworks / Modular systems architecture	Fiston Tshingombe	[1]
675	Senior Applications Functional Specialist	Engineering / IT	Visual Basic / Audit trail logic	Fiston Tshingombe	[1]
10252	Developer (NAT/MS/JAVA)	Development & Integration	Java	Fiston Tshingombe	[1]
Macro3	Read data from PLC and send command	Engineering	C# / PLC Communication Programme	tshingombe@gmail.com	[2]
Not in source	Robotic Movement & PLC Logic	Engineering / Automation	Visual Basic, PLC control	Tshingombe Tshitadi Fiston	[3]
Not in source	Design and implementation of a modular Information Management System (IMS)	Academic / Engineering Research	Visual Basic, Microsoft Office 2007, Azure DevOps	Tshingombe Tshitadi Fiston	[3]
80	Engineering	Engineering	Visual Basic	Tshingombe	[4, 5]

	visual basic data system				
82	Engineering visual excel MS Word	Engineering	Visual Basic, Excel, MS Word	Not in source	[4]
83	Engineering NATED NVC excel research TVET	Engineering / Research	Excel, NATED, NVC	Tshingombe	[4, 5]
78	Engineering excel visual basic TS	Engineering	Excel, Visual Basic	Tshingombe	[4]
77	Engineering Tshingombe	Engineering	Azure DevOps	Tshingombe	[4]
76	Engineering Tshingome	Engineering	Azure DevOps	Tshingome	[4]
69	Engineering Tshingombe	Engineering	Azure DevOps	Tshingombe	[4]
74	Engineering data system	Engineering	Azure DevOps	Not in source	[4]
84	NRF Engineering	Engineering	Azure DevOps	Not in source	[4]
85	Engineering trade programme	Engineering	Azure DevOps	Not in source	[4]
86	Discovery career science technical engineering	Engineering	Azure DevOps	Not in source	[4]
81	Engineering visual basic	Engineering	Visual Basic	Not in source	[4]
79	Engineering visual basic	Engineering	Visual Basic	Not in source	[4]
67	Engineering Alison master	Engineering	Alison	Tshingombe	[5]
Macro1	Code reset and initialize form with default form	Programming	Excel VBA	Not in source	[2]
Macro2	Simple calculation interface setup	Programming	Visual Basic	Not in source	[2]
Not in source	Generate	Engineering /	Visual Basic	Not in source	[1, 6-

	Triangle Wave (Tri_Wave)	Programming Task	(VBA)		8]
Not in source	Op amp closed loop gain - non-inverting amplifier (K_op_non)	Engineering	Visual Basic (VBA)	Not in source	[6, 8]
Not in source	Generate SHA256	Research / Security	Visual Basic (CSHA256)	Not in source	[6, 9]
Kfrm1	Initial registration (name, surname, ID, cellphone)	Information Management System	Visual Basic (VB)	Tshingombe Tshitadi Fiston	[3]
Kfrm2	Address and birthday capture	Information Management System	Visual Basic (VB)	Tshingombe Tshitadi Fiston	[3]
Kfrm3	Registration confirmation	Information Management System	Visual Basic (VB)	Tshingombe Tshitadi Fiston	[3]
Kfrm4	Account login and password recovery	Information Management System	Visual Basic (VB)	Tshingombe Tshitadi Fiston	[3]
Kfrm5	Password resend and record saving	Information Management System	Visual Basic (VB)	Tshingombe Tshitadi Fiston	[3]
Kfrm6	Security scanner and biometric validation	Law Enforcement / Security	Visual Basic (VB)	Tshingombe Tshitadi Fiston	[3]
Uc1	Create Account	Law Enforcement	Web-Based Crime Management System	Administrator	[10]
Uc2	View User Account	Law Enforcement	Web-Based Crime Management System	Administrator	[10]
Uc3	Update account	Law Enforcement	Web-Based Crime Management System	Administrator	[10]
Uc7	Assign placement for police	Law Enforcement	Web-Based Crime Management System	Police Head	[10]

Uc11	Post missing criminals	Law Enforcement	Web-Based Crime Management System	Police Head	[10]
Uc24	Register Accused	Law Enforcement	Web-Based Crime Management System	Detective Officer	[10]
Uc28	Register Employee	Law Enforcement	Web-Based Crime Management System	Human Resource Manager	[10, 11]
Uc31	Send complain	Law Enforcement	Web-Based Crime Management System	Complaint	[10]
Uc36	Login	Law Enforcement	Web-Based Crime Management System	Police Head, Preventive Police, Detective Officer, HR Manager, Administrator, Complaint	[10]
Not in source	Web-Based Crime Management System for Samara City Main Police Station	Research / Information Systems	Crime Management System	Demelash Lemmi Ettisa, Minota Milkias	[1]
GP 49/3/17	Detective Officer: Economic Crimes	Law Enforcement	Crime Administration System (CAS)	Lt Col Henning	[2]
GP 38/3/17	Sub Section Commander: Shifts	Law Enforcement	Sector Policing	Lt Col Henning	[2]
10563	Investigator: Digital Forensics	Tax Crime & Intelligence	Evidence mapping / forensic hooks	Fiston Tshingombe	[1]
1222	Contractor - Associate Investigator General	Law Enforcement	Evidence mapping / legal workflow integration	Fiston Tshingombe	[1]

4702024FCV001046	Domestic Violence Protection Order Application	Law Enforcement	DOJ Online Protection Order	Tshingombe Tshitadi	[2]
jr 2461/15	Review of CCMA record	Legal	CCMA labour / high court DOJ	tshingombe tshitadi fiston	[2]
JA 37/19	Appeal Case / Estes issue file	Legal	Labour appeal court	tshingombe tshitadi fiston	[2]
1042024CIV004539	Civil Law Case	Legal	Master of the high court service	tshingombe tshitadi	[2]
1165	IT Asset Management Administrator	IT / Compliance	Compliance automation / asset lifecycle tracking	Fiston Tshingombe	[1]
1208	Associate Resolution Planning Specialist	Finance / Compliance	Risk-based compliance / systemic reform	Fiston Tshingombe	[1]
10506	Revenue Analyst	Finance & Analytics	Budget modeling / compliance scoring	Fiston Tshingombe	[1]
10552	Ops Manager: Audit (Tax Audit)	Audit & Oversight	Not in source	Fiston Tshingombe	[1]
10546	Quality Assurance Consultant	QA & Governance	Testing frameworks	Fiston Tshingombe	[1]
10483	Software Tester (Automation)	Digital Transformation	Automation samples	Fiston Tshingombe	[1]
EN0202272ID	Thesis Master Engineering Doctoral Engineering Electrical Rural	Research	Elektor Labs	tshingombe tshi tshitadi	[2]
Not in source	Career Education Didactic Report	Academic / Engineering Research	Curriculum Assessment	Tshingombe Tshitadi	[12]

[1] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[2] Doc13 design tshing.docx

[3] UserForm total career outcom 90000333 , completed tota.frm to trade.frmt5.pdf
[4] Work items - Boards azure.pdf
[5] Work items - Boards azure tshingombe.pdf
[6] TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE,,, framework.pdf
[7] UserForm16 tshingombe circuit trade theory readness job.frm 2.pdf
[8] trade electrical theoretical practic form tshing.pdfsubstation transmission workbase experiemental carer ,.pdf
[9] tshingombe REPUBLIC OF SOUTH AFRICA(1).pdf
[10] UserForm17 police student registrar tshingombe tank ,,career.frm3.pdf
[11] tshingombe REPUBLIC OF SOUTH AFRICA.pdf
[12] new career engineering.pdf
Based on 50 sources

Object Type	Control Name	Associated Label/Caption	Function or Event Type	Code Snippet or Content	System or Project Context	Source
Project	Web-Based Crime Management System	Crime Prevention	Online complaining and computerized management	Web-Based Crime Management System for Samara City Main Police Station	Automated system for police and citizens to share information	Web-Based Crime Management System for Samara City Main Police Station (Research Article)
Function	Tri_Wave	Triangle Wave / Generate Triangle Wave	Mathematical Waveform Generation	Tri_Wave=v1+dV_dt1×t_tri	Engineering signal simulation / UserForm16	UserForm 90004444 career totand and trade portoloio. frm1.pdf; [1-3]
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						Modular Customer Transaction System Technical Synthesis; UserForm total career outcom 90000333, completed tota.frm to trade.frmt 5.pdf
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						trade.frmt 5.pdf; [1]
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Function	GenerateSHA256	SHA ID output	Cryptographic Hash	`GenerateSHA256 = shaObj.SHA256(inputText)`	Certificate issuance for products	UserForm 90004444 career totand and trade portoloio. frm1.pdf
Function	K_op_non	Non-inverting amplifier gain	Op amp closed loop gain	K_op_non=(R2+R1)/R1	Analog circuit analysis	UserForm 90004444 career totand and trade portoloio. frm1.pdf
Mathematical Function	WindEnergyHarvest	Total Energy Harvested (Wind)	Calculation	WindEnergyHarvest=0.5×ρ×A×(v3)×η×duration	The Audit-Grade Career Engine / Credential Dashboard	new career engineering.pdf
Command Button	cmdValidateMetadata / txtTitle	Validate Metadata / Metadata validated for	Click	If `txtTitle.Text = ""` Or `txtDepot.Text = ""` Then MsgBox "Please complete all metadata fields."	KfrmArchive IPValidator / Personal Knowledge Management System	new career engineering.pdf; [4]
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Command Button	cmdMove	Move	Click	`lblStatus.Caption = "Moving to X:" & xPos & " Y:" & yPos & "`	Robotic Control Interface -	Robotic Extension Overview

				`Z:" & zPos`	Kinematic movement	: Industrial Automation Design
User Interface Element	githubPullRequests.queries	Waiting For My Review	Custom Search Query	`"query": "is:open review-requested:${user}"`	VS Code Extension - GitHub Pull Requests	GitHub Pull Requests for Visual Studio Code Documentation
Work Item	Azure DevOps summary	Sprint tracking	Task automation and project tracking	Dashboards: Azure DevOps summary and sprint tracking	Professional certification and career development suite	Information Management System (IMS) Technical Synthesis
Subroutine	BuildMilStd810AuditChecklist	Automating Compliance	Automated Checklist Generation	`.Range("B1").Value = "Requirement" .Range("C1").Value = "Compliance Status"`	Engineering Standards Compliance Automation	[4]
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Label	label 2	REQUIREMENT	Click	`text1=label 2requiremn`	Trade Theory and	[1]

					Practical Tools Lab Workshop Manufacture	
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Work Item	81	engineering visual basic	Not in source	ID 81: engineering visual basic	Azure DevOps Work Items	Work items - Boards azure.pdf
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Command Button	cmd clear	Not in source	Click	`Txt input text =" "`	Simple calculation in vb visua	Doc13 design tshing.doc

					basic	x
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Label	Label12	Not in source	Click	`Private sub label 12 _click`	VISUAL BASIC ATM PROGRAM	Doc13 design tshing.docx
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[1] TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE,,, framework.pdf
[2] UserForm16 tshingombe circuit trade theory readness job.frm 2.pdf
[3] trade electrical theoretical practic form tshing.pdfsubstation transmission workbase experiemental carer ,.pdf
[4] new 2career engineering.2.pdf
[5] UserForm1 5tshingombe atm.pdf

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Object Type	Control Name	Associated Label/Caption	Function or Event Type	Code Snippet or Content	System or Project Context	Source
Project	Web-Based Crime Management System	Crime Prevention	Online complaining and computerized management	Web-Based Crime Management System for Samara City Main Police Station	Automated system for police and citizens to share information	Web-Based Crime Management System for Samara City Main Police Station (Research Article)
Function	Tri_Wave	Triangle Wave / Generate Triangle Wave	Mathematical Waveform Generation	Tri_Wave=v1+dV_dt1×t_tri	Engineering signal simulation / UserForm16	UserForm 90004444 career totand and trade portoloio. frm1.pdf; [1-3]
Command Button	cmdNext	Next	Click	`Private Sub cmdNext_Click()` If `txtName.text = ""` Or `txtSurname.text = ""` Then MsgBox "Please complete all fields." Else `Kfrm2.Show Me.Hide` End If	Information Management System (IMS) - Kfrm1 Registration	Information Management System: Modular Framework Overview ; UserForm total career outcom 90000333 , completed tota.frm to

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TextBox	txtQuantity	Quantity	Exit (Validation)	`Private Sub txtQuantity_Exit()` If Not `IsNumeric(txtQuantity.text)` Or `val(txtQuantity.text) <= 0` Then MsgBox "Enter a valid quantity." `Cancel = True`	Customer Transaction System	Modular Customer Transaction System Technical Synthesis; UserForm total career outcom 90000333 , completed tota.frm to trade.frmt 5.pdf
TextBox	TextBox9	Fault code	Logic Check / Change	If `TextBox9.text` = "IEC61850" Then MsgBox "Protocol accepted..." / If `TextBox9.text` = "FDR-TRP" Then MsgBox "Feeder tripped."	IED configuration / Protocol validation / Information Management System (IMS)	UserForm 90004444 career totand and trade portoloio. frm1.pdf; UserForm total career outcom 90000333 , completed tota.frm to trade.frmt 5.pdf; [1]
Function	SineWave	Create sine wave	Mathematical Waveform Generation	SineWave=Vp×Sin(2×π×fo×t+Phase×π/180)+Vdc	Electrical Engineering Circuit Simulation / UserForm16	[1-3]
Function	GenerateSHA256	SHA ID output	Cryptographic	`GenerateSHA256 = shaObj.SHA256(inputText)`	Certificate issuance for	UserForm 90004444

			Hash		products	career totand and trade portoloio. frm1.pdf
Function	K_op_non	Non-inverting amplifier gain	Op amp closed loop gain	K_op_non=(R2+R1)/R1	Analog circuit analysis	UserForm 90004444 career totand and trade portoloio. frm1.pdf
Mathematical Function	WindEnergyHarvest	Total Energy Harvested (Wind)	Calculation	WindEnergyHarvest=0.5×ρ×A×(v3)×η×duration	The Audit-Grade Career Engine / Credential Dashboard	new career engineering.pdf
Command Button	cmdValidateMetadata / txtTitle	Validate Metadata / Metadata validated for	Click	If `txtTitle.Text = ""` Or `txtDepot.Text = ""` Then MsgBox "Please complete all metadata fields."	KfrmArchive IPValidator / Personal Knowledge Management System	new career engineering.pdf; [4]
Command Button	cmdScan	Scan	Click	`biometricFlag = 1'` Simulated scan success	Biometric Scan and security validation (Kfrm6)	Information Management System: Modular Framework Overview
Command Button	cmdMove	Move	Click	`lblStatus.Caption = "Moving to X:" & xPos & " Y:" & yPos & " Z:" & zPos`	Robotic Control Interface - Kinematic movement	Robotic Extension Overview : Industrial Automation Design
User Interface Element	githubPullRequests.queries	Waiting For My Review	Custom Search Query	`"query": "is:open review-requested:${user}"`	VS Code Extension - GitHub Pull Requests	GitHub Pull Requests for Visual Studio Code

						Documentation
Work Item	Azure DevOps summary	Sprint tracking	Task automation and project tracking	Dashboards: Azure DevOps summary and sprint tracking	Professional certification and career development suite	Information Management System (IMS) Technical Synthesis
Subroutine	BuildMilStd810AuditChecklist	Automating Compliance	Automated Checklist Generation	`.Range("B1").Value = "Requirement" .Range("C1").Value = "Compliance Status"`	Engineering Standards Compliance Automation	[4]
UserForm	frm dataentry	student registration form	Initialize	`.txt student name.text=" "`	Automated student's registration form in excel and vba	Doc13 design tshing.docx
Radio Button	radio button 5	Top up button	Checked Changed	`Private radio button 5 _ checked changed`	VISUAL BASIC ATM PROGRAM	Doc13 design tshing.docx
Button	confirmButton	OK	Click	If `pinBox.Text = "9343"` Then `transactionGroupBox.Enabled = True`	ATM Program / UserForm1	[5]
TextBox	pin box	Not in source	Input	If `pin box .text="9343"` then `Transaction group . enabled = true`	VISUAL BASIC ATM PROGRAM	Doc13 design tshing.docx
Label	label 2	REQUIREMENT	Click	`text1=label 2requiremn`	Trade Theory and Practical Tools Lab Workshop Manufacture	[1]
Label	label 3	TRAIN KIT	Click	`text 2=label3 train kit`	Trade Theory and Practical Tools Lab Workshop Manufacture	[1]

Label	label 4	MATERIAL COPPER	Click	`text3=label 4 material copp`	Trade Theory and Practical Tools Lab Workshop Manufacture	[1]
Label	label 16	TRIAC	Click	`text 15=label 16 triac`	Trade Theory and Practical Tools Lab Workshop Manufacture	[1]
Label	label 17	ITEGRET CIRCUIT	Click	`text 16=label 17 integer circuit`	Trade Theory and Practical Tools Lab Workshop Manufacture	[1]
Work Item	80	engineering visual basic data system	Not in source	ID 80: engineering visual basic data system	Azure DevOps Work Items	Work items - Boards azure.pdf
Work Item	81	engineering visual basic	Not in source	ID 81: engineering visual basic	Azure DevOps Work Items	Work items - Boards azure.pdf
Button	button 23	Not in source	Click	`Operand 2=val (txt input.text)` Select case [operator] Case "+" `Result=operand1+operand2`	Simple calculation in vb visua basic	Doc13 design tshing.docx
Command Button	cmd clear	Not in source	Click	`Txt input text =" "`	Simple calculation in vb visua basic	Doc13 design tshing.docx
TextBox	txt_label9	Crime Prevention	Not in source	`"txt_label9"=true`	Web-Based Crime Management System / UserForm14	[6]
TextBox	txt_label10	Traffic Safety	Not in source	`"txt_label10"=true`	Web-Based Crime Management System /	[6]

					UserForm14	
TextBox	txt_label3	Applied Policing and Crime Resolution	Not in source	`"txt_label3"=true`	Web-Based Crime Management System / UserForm14	[6]
Scroll Bar	ScrollBar1	Not in source	Change	`Private Sub ScrollBar1_Change()`	UserForm total career outcome	UserForm total career outcom 90000333 , completed tota.frm to trade.frmt 5.pdf
Option Button	HTMLOption2	Not in source	Click	`Private Sub HTMLOption2_Click()`	VBA Excel Sheet	VBA EXCELL SHEET.pdf
TextBox	HTMLText1	Not in source	GotFocus	`Private Sub HTMLText1_GotFocus()`	VBA Excel Sheet	VBA EXCELL SHEET.pdf
TextBox	TextBox1	Not in source	Change	`productName = TextBox1.text` / `Private Sub TextBox1_Change()`	Issue Certificate / SHA ID output / frm1	[1]; Doc13 design tshing.docx
TextBox	TextBox2	Not in source	Change	`TextBox2.text = GenerateSHA256(productName)`	Issue Certificate / SHA ID output	[1]
TextBox	TextBox14	Not in source	Change	`Private Sub TextBox14_Change()`	TRADE EXPO DISOVERY CAREER CPD	TRADE EXPO DISOVERY CAREER CPD.pdf
Combo Box	ComboBox1	Not in source	Change	`Private Sub ComboBox1_Change()`	UserForm3	Doc13 design tshing.docx

Label	Label10	Not in source	Click	`Private Sub Label10_Click()`	TRADE EXPO DISOVERY CAREER CPD	TRADE EXPO DISOVERY CAREER CPD.pdf
Label	Label11	Not in source	Click	`Private Sub Label11_Click()`	VBA UserForm Module	UserForm 90004444 career totand and trade portoloio. frm1.pdf
Label	Label12	Not in source	Click	`Private sub label 12 _click`	VISUAL BASIC ATM PROGRAM	Doc13 design tshing.docx
Frame	Frame1	Not in source	Click	`Private Sub Frame1_Click()`	UserForm total career outcome	UserForm total career outcom 90000333 , completed tota.frm to trade.frmt 5.pdf

[1] TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE,,, framework.pdf
[2] UserForm16 tshingombe circuit trade theory readness job.frm 2.pdf
[3] trade electrical theoretical practic form tshing.pdfsubstation transmission workbase experiemental carer ,.pdf
[4] new 2career engineering.2.pdf
[5] UserForm1 5tshingombe atm.pdf
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Based on 38 sources

Qualification or Skill Name	Issuing Institution or Platform	Category	NQF Level	Status or Achievement	Core Subjects or Skills Involved	Document Reference (Inferred)	Source
National N Diploma in Electrical Engineering	DHET / SAQA / St Peace College	Academic	6	Awarded / Eligible (360 Credits)	Electrical Engineering, Mathematics, Engineering	SAQA ID 66994 / 90674 / 111285	[1-3]

					Science, Electrical Trade Theory, Industrial Electronics, Electrotechnics, Plant Operation		
Engineering Electrical N4-N6	DHET	Academic	5	Certified	Electrical Science, Electrotechnique, Industrial Electronics	SAQA ID 67109	[1]
National N Certificate (N3)	St Peace College / DHET	Academic	NQF 5 (Inferred)	Invalidated / Irregularity committed	Industrial Orientation, Electro-Technology, Electrical Trade Theory	Ref: 20191130002	[2]
Certificate in Mathematics & Computer Science	UNIKIN (DR Congo)	Academic	Not in source	Certified	MS DOS, Word, Excel	UNIKIN-2006	[2]
Preparatory Certificate	ISPTKIN (DR Congo)	Academic	Not in source	Certified	Mathematics, Physics, Chemistry, Electrical & Mechanical Technology	ISPTKIN-2007	[2]
Diploma in Electrical Studies	Alison	Academic	Not in source	12% Progress	Electrical theory, core engineering components	Alison Dashboard Record	[3, 4]
AI Fluency	Microsoft Learn / Sci-Bono	Digital Competencies	Not in source	Completed	Generative AI, Responsible AI, Pattern identification, machine learning models	MCID 99587175	[1, 3]
Introduction	Microsoft	Digital	Not in	Certified /	Data	MCID	[2, 3]

to Data Engineering on Azure	Learn	Competencies	source	Completed	Engineering, Azure Synapse, Azure Fabric, Azure Test Plans	99587175 / 9953174	
Diploma in Robotics	Alison	Digital Competencies	Not in source	Completed	Robotics and Automation	Alison CPD	[2, 5]
GitHub Fundamentals	Microsoft Learn / GitHub	Digital Competencies	Not in source	In Progress (84%)	GitHub Administration, Repos, Branches	GitHub Admin Badge	[1]
Copilot Productivity	Microsoft Learn	Digital Competencies	Not in source	Done	Microsoft Copilot, Task Automation	Microsoft Learn Achievements	[1]
Cyber Essentials Plus	BlockMark Registry	Digital Competencies	Not in source	Verified (Valid to 2025-12-13)	Cybersecurity compliance, digital security competence	UK Cybersecurity Standards	[2]
TeSys T LTMR Configuration	Schneider Electric	Industrial Training	Not in source	Certified	Motor Management, Relay Specs, Logic Input Wiring	DOCA0128EN-02	[1]
Certificate of Completion	Schneider Electric	Industrial Training	Not in source	Certified	Power products and systems (Compact NSX, MCCBs)	Work Expert	[2]
PLC Configuration & EcoStruxure Power	Schneider Electric	Industrial Training	Not in source	Completed (14.15 Hours)	Industrial automation, energy modeling, kinematic calculation	Schneider ID: 607069d9-fa26-423a-9d8c-d810df173a87	[3]
ISO 37301:2021 Principle of Compliance Management System	Alison	Industrial Training	Not in source	Certified (91%)	Compliance management, regulatory standards	Alison ID: 37876299	[3, 4]

SASSETA Assessor & Moderator	SASSETA / PSiRA	Industrial Training	Not in source	Registered / Certified	Engineering fabrication, security management electronics, assessment moderation	ID Number: TIRCG00091061010	[3]
Registered Professional Engineer	ECSA / Home Affairs	Industrial Training	Not in source	Registered	Engineering Standards, CPD Activities	ECSA Registration	[2]
Labour Law Training	SASSETA / CCMA	Industrial Training	Not in source	800 Credits (Inferred)	Workplace Dispute Resolution, Labour Relations Act (LRA)	MERSETA + Home Affairs Log	[2]
Schneider Home Certification	Schneider Electric	Industrial Training	Not in source	Pending	Inverters, Pulse Backup Controller, Load Control	Schneider Training Portfolio	[1]
Web-Based Crime Management System (WBCMS)	Qeios / Atlantic International University	Research/Projects	Not in source	Peer Reviewed / Thesis	Information Systems, Software architecture, PHP, SQL, UML modeling	DOI: 10.32388/JGU5FH	[1, 6]
Information Management System (IMS) Prototype	Tshingombe Tshitadi Fiston (Inventor)	Research/Projects	Not in source	Completed / Prototype	Visual Basic (VB), Biometric Validation, Data Integrity, Credential Handling	IMS Modular Framework / Kfrm1-Kfrm6	[1, 7]
S.E.E.E.I.S. U.A Regulatory Framework	Self-Authored Research	Research/Projects	Not in source	Strategic Report	Energy efficiency, interregional regulation, MIL-STD protocols	Internal Reference: 2023–2025	[8]
Rural Electrification Initiative	National Skills Fund	Research/Projects	Not in source	Declined / Ineligible	50-watt Solar Home Systems	Ref: PSTD250411310291	[2]

	(NSF)				(SHS), PV-based hybrid systems		
NSF I-Corps Application	National Science Foundation (NSF)	Research/Projects	Not in source	Rejected / Declined	Career project implementation framework design	Status Date: Feb 14, 2025	[3]
MIP-630-24-0100-000	Not in source	Research/Projects	Not in source	Submitted	Intellectual Property, Licensing	MIP Registration ID	[1]

[1] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[2] new 3career engineering3.pdf
[3] new career engineering.pdf
[4] tshingombe tshitadi Free Online Courses from the World's Top Publishers.pdf
[5] tshingombe total project article drawing aiu careerRequest an intellectual property (IP) licence _ Metropolitan Police.pdf
[6] UserForm17 police student registrar tshingombe tank ,,career.frm3.pdf
[7] UserForm total career outcom 90000333 , completed tota.frm to trade.frmt5.pdf

Based on 38 sources

Project or Qualification Title	Institution or Platform	Field of Study	Outcome or Status	Date or Duration	Evidence Type	Regulatory Alignment	Source
National N Diploma: Electrical Engineering	St. Peace College	Electrical Engineering	Awarded	24 months of practical experience	Diploma	SAQA ID 66994 / 90674; NQF Level 6	[1]
Master of Eng. Systems - Thesis	Atlantic Intl. University	Engineering Systems	Accepted	2025-10-08	Thesis Review	Not in source	[2]
Registered Professional Engineer	ECSA / Home Affairs	Professional Engineering	Awarded	2025-10-08	Professional Registration	Not in source	[2]
National N Diploma	St. Peace College	Electrical Engineering	Unresolved	Not in source	Dossier Submission	SAQA / NQF Level 7, 8, 9	[2]
Information Management System (IMS)	Visual Basic Architecture / Runtime	AI / Information Systems	Prototype Complete	Not in source	VBA Macro / Modular	National Curriculum Standards	[3], [4]

Prototype					VB Code		
Web-Based Crime Management System for Samara City	Qeios Peer-approved Preprints Archive	Information Systems / Computer Science	Published (Preprint)	Dec 11, 2023	Research Article / Preprint	Not in source	[3], [5]
S.E.E.E.I.S.U.A Proposal	South Union Africa Intergovernmental initiative	Energy-Efficient Electrical & Industrial Systems	Proposed	2023–2025	Technical Report	MIL-STD-810, MIL-STD-461, IEEE 1459	[6]
SASSETA Assessor & Moderator	SASSETA / PSIRA	Security and Quality Assurance	Awarded	22 December 2024	Professional Certificate	SAQA Unit Standards; PSIRA Act 56 of 2000	[1]
UNIKIN Certificate	UNIKIN (DR Congo)	Mathematics & Computer Science	Awarded	2006	Diploma	Not in source	[2]
IT Asset Management Administrator (Ref 1165)	South African Reserve Bank (SARB)	Information Technology / Compliance	In Progress	Feb 09, 2025	Application Submission	OHS Act / SANS	[3]
Applications Design Lead (Ref 904)	South African Reserve Bank (SARB)	Systems Architecture	In Progress	Feb 09, 2025	Application Submission	VBA Systems Framework	[3]
MIP-630-24-0100-000 Registration	Microsoft Forms	Intellectual Property / Legal	Awarded	Feb 14, 2024	Registration Form Submission	IP Licensing Workflow	[3]
Basic Electrical Safety	Sci-Bono Discovery Centre	Electrical Engineering	Awarded	2025-10-08	Certificate	SAQA/NQF Level 4	[2]
Workplace Dispute Resolution	SASSETA / CCMA	Labour Law	Awarded	2025-10-08	Training Record	MERSETA Compliance	[2]
Trailblazer Superbadge - Data Cloud	GitHub / Azure DevOps	Software Development	Awarded	2025-10-08	Technical Badge	GitLab Audit Log	[2]
Energy Mgmt Compliance	Schneider Electric	Compliance Engineering	Awarded	2025-10-08	Technical Certification	GitLab + Azure DevOps	[2]
Engineering	St. Peace	Electrical	In	Not in	Diploma	SAQA /	[3]

Science N3	College	Engineering	Progress	source	Component	QCTO / UMALUSI	
Engineering Drawing N3	St. Peace College	Electrical Engineering	In Progress	Not in source	Diploma Component	SAQA / QCTO / UMALUSI	[3]
Industrial Electronics N3	St. Peace College	Electrical Engineering	In Progress	Not in source	Diploma Component	SAQA / QCTO / UMALUSI	[3]
Diesel Trade Theory N3	St. Peace College	Electrical Engineering	In Progress	Not in source	Diploma Component	SAQA / QCTO / UMALUSI	[3]
Altivar Machine Professional Training	Schneider Electric	Automation & Drives	In Progress	Not in source	Curriculum Module	SANS / IEC / OHS Act	[3]
VBA-Based Financial Calculator	Microsoft Learn / .NET Framework	Computer Programming	Awarded	Not in source	VBA Macro / Code Script	SARB Training Alignment	[3]
NSF I-Corps Application	National Science Foundation (NSF)	Technological Innovation	Declined	Feb 3, 2025	Project Submission	Not in source	[2]
TeSys™ T LTMR Motor Management System Configuration	Schneider Electric	Electrical Engineering	Completed	Not in source	Case Study	EMC Standards for industrial environments	[1]
ISO 37301:2021 principle of compliance management system	Alison	Compliance Management	Certified (91%)	Not in source	Digital Certificate	ISO 37301:2021	[1]
Introduction to Data Engineering on Azure	Microsoft Learn	Cloud & Data Engineering	Completed	Not in source	Certification	Microsoft Professional Certification	[1]
Career project implementation framework design	F1000Research	Educational Framework	Rejected	11 Apr 2025	Research Submission	Not in source	[1]
Google	Google	Education	Complete	October	Certificate	Not in	[7]

Classroom Fundamentals	Classroom	Technology	d	26, 2023	of Completion	source		
VBA-powered diagnostic quiz	Visual Basic for Applications	System Automation	Developed	Not in source	VBA Macro / Software Tool	SAQA/DHET framework tracking	[1]	

[1] new career engineering.pdf
[2] new 3career engineering3.pdf
[3] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[4] UserForm total career outcom 90000333 , completed tota.frm to trade.frmt5.pdf
[5] UserForm17 police student registrar tshingombe tank ,,career.frm3.pdf
[6] 🗏 Technical Report TitleSHINGOMBE OPGENIAC.docx
Based on 20 sources

Entity Name	Department/ Qualification Title	SAQA/ID Number	Technical Specifications/Parameters	Operational Task/Activity	Assessment/ Accreditation Status	Budget/ Cost (Inferred)	Status/Outcome	Source
St. Peace College / City Power	National N Diploma / National Certificate in Electrical Engineering (N1–N6)	67109, 67375, 67491, 66881, 66960, 67005, 90674, 111285	NQF Levels 1–6; 360 credits; 220V (Single-Phase), 380V (Three-Phase), 400V to 33kV; Frequency: 50/60 Hz; Subjects: Mathematics, Engineering Science, Industrial Electronics, Electrotechnics, Trade Theory	Workplace training, panel wiring, electrical installations, transformer rewinding, motor control, fault finding, and maintenance; Implementation of ICASS, ISAT, and national examinations	Accredited by Umalusi, QCTO, and DHET; Professional Registration path with ECSA; SETA (Merseta, Sasseta) accreditation	R20,000 – R40,000 (Tuition); R4,800,000 (Projected); R40M (NSF Budget Cap)	Eligible for National Diploma after 18–24 months work experience; some results under investigation for irregularities	[1], [2], [3], [4], [5], [6], [7, 8], [9], [10], [11], [12]
City	Electrician	Ref: 001	Voltage	Maintena	Registered	R350,96	Operation	[1],

Power Johannesburg (SOC) Ltd	(Shift Worker) / Engineering Operations		levels: LV, MV, HV up to 88kV; Cable: 6 x single core 2500 mm2 Aluminium XLPE; Max Demand: 56kVA (SPU), >56kVA (LPU); Peak demand: 2800 MW	nce, repair, and installation of electrical systems; motor and transformer maintenance; network operations; meter reading and calibration	Employer for Artisans-in-training; Partner with ECSA Road to Recruitment; SANS 10142-1 compliance	6 (Task Grade 9 annual salary); R272,700,000 (Infrastructure Budget)	al service delivery and skill development; Active recruitment phase	[4], [1.3, 1986, 2000, 2094, 2135, 2176, 5200]
St. Peace College / City Power	Electrical Machinery (Motor / Transformer / Generation)	258937, 258968, 116434	Motor: Type 90 LS, 1410–3000 rpm, 1.8kW, IP 44; Transformer: 20kVA, 2500/500V; Flux: 0.00427wb; 60 turns of 1.15mm copper wire; Ns =120f/p	Motor/Transformer rewinding; Stator/Rotor disassembly; Induction motor torque/speed testing; Fault finding on control panels	SABS/SANS 0142 certification; Quality assurance via EIC (Electrical International Commissioner)	R90,000 (Sub-contractor rate); R9,500 (3-phase DB installation)	Successful certification of leakage current and pressure tests; practical lab experiments ongoing	[1], [3], [4], [10], [12]
Eskom	Electrical Substation Engineering / Generation / Graduate in Training	Reg No 2002/15527/30	Extra High Voltage (265–275 kV), High Voltage (110 kV+); 25kV/15kV	Electricity generation, transmission, and grid	Regulatory Adherence (SANS/IEC); Accredited Training Provider via SETA/ECSA	ZAR 15,459 per household connection;	Infrastructure provider for student practical work;	[1], [7, 8], [11], [13]

			catenary supply; Efficiency η=(Pout /Pin)×100%	management; protection systems for transformers; renewable energy integration		R174 billion (Gov guarantee)	Ongoing challenges with power shortages	
Operation GENIAC	Military Combat Engineering / AI / Infrastructure Automation	NQF Level 6–9	75MHz clock speed; 64KB memory; Combat Mass: 30F	Digitizing public infrastructure assets (SAIMS); tactical engineering (bridge building)	MIL-STD, ECSA, POPIA, SABS, DHET compliant	R40,000,000 to R50,000,000,000; R600M investment	Active flagship initiative for human-machine collaboration	[6]
Atlantic International University (AIU)	Masters / Doctoral in Electrical Engineering	71638	100% Distance Learning; Thesis: 7,500 – 15,000 words; Research on rural implementation and power factor correction	Curriculum design; Thesis research; Virtual Campus management via Moodle/ WebCT	Pending SAQA Foreign Qualification Evaluation; AS9100 quality alignment	$150 Application Fee; $300 - $450 per credit	Unresolved/Pending academic validation; Scholarship awarded	[2], [3], [10], [14]
Schneider Electric	Industrial Automation & Power Management	607069d9-fa26-423a-9d8c-d810df173a87	Modicon PLC range; Variable Speed Drives (ATV12); Motor Circuit Breakers (GV2ME32: 24-32A); EcoStruxure Expert Cert	Training in PLC configuration, energy modeling, and smart grid technologies; Protectiv	International standards (IEC 61508, SIL 2); EcoStruxure Expert Programming Level 1	R10,000 (Smart Panel module); 6% price increase on MCCB products	140+ training modules completed; active industrial solutions	[5], [6, 15], [7, 8], [11], [2]

				e relays configuration				
City Power / Eskom	Energy Storage Systems Project / Rural Electrification	Business Plan 2021/22	Max demand: 2800 MW; Solar PV: 27.527MW; Lithium-Ion storage: 7.268MWh; SHS: 0.3 to 0.4 kWh/day	Manage winter evening peak demand; store surplus energy; reduce maximum demand penalties	New Generation Regulations (October 2020) compliance	R40,000,000 (Max budget for RFP Phase 1); $4,000,000 (NSF funding request)	Feasibility study completed; Proposed framework for sustainable electrification	[4], [6, 15]
St. Peace College / City Power Project	Electricians Trade Test Panels	Tender: Learning Academy	Modular panels for electrician trade tests; SANS 10142-1 Compliance	Assessment of existing trade test panels; supply and delivery of modular panels	NAMB and/or SETA accreditation required for verification agency	R1,000,000 (Total bid price listed in tender forms)	Appointment of a verification agency for technical functionality	[1]
Dalkeith Substation to Lutz Substation	132kV/88kV Cable Supply Project	CP_TSSPEC_153	Voltage: 88kV; Cable: 2500 mm2 Aluminium XLPE; 200MVA firm capacity; Length: 4800 meters	Construction of double circuit supply; directional drilling; trenching and jointing	IEC 60071-1&2 Insulation Coordination; SANS 60840 testing	R684,000,000 (YTD Actual capital expenditure)	Design phase completed; Construction in progress	[5158, 4040, 1.3]
QCTO / SAQA	Occupational Qualification Sub-Framework	NQF Level 6/7/8/9	Minimum requirements: 18 months practical (General), 24 months (Engineering)	Oversight of trade testing (electricians) and foreign qualificat	Regulatory Body / Quality Assurance	R203.7 million (Claim for patrimonial loss context)	In progress / Marking irregularities under investigation	[7, 8], [13, 16]

				ion evaluation				
Madinda Utilities	Advanced Metering Infrastructure (AMI) Rollout	NQF Level 6 (Inferred)	DLMS/COSEM-compliant hardware; remote configuration; RFID asset tagging	National rollout across 186 municipalities; revenue protection and load management	IEC 62056-5-3, DLMS/COSEM, AFSEC, SABS compliance	$126M COP24 grant	2,700 direct jobs created; reduction of non-technical losses	[6]
National Skills Fund (NSF)	NSF CAREER Program	Reference: P-09874	Rural households (13.2 million), 50-watt SHS (0.3-0.4 kWh/day)	Funding research for rural electrification and vocational career learning	Grant Application / Proposal Stage	$400,000 to $4,000,000 (NSF grant standard ranges)	Declined/ Pending (Reason: Accredited institution requirements)	[7, 8]
South African Qualifications Authority (SAQA)	National Certificate: Electrical Engineering (Mining)	72071	133 Credits; NQF Level 3	Design and install electrical wire ways; Install/maintain low-voltage equipment	Registered Qualification	R3,000.00	Active	[5, 17, 18]
Tshingombe Tshitadi Engineering	Professional Services	Tax Ref: 9722328238	Services: Business Engineering, Technical Consulting	Implementation of a framework circuit college for a Master's degree qualificat	Registered on Central Supplier Database (CSD)	ZAR 100,920.00 (Total amount for INV-0004)	Quote Request Submitted to MPC	[5]

				ion				
Beijing Huadian E-commerce	B2B E-commerce sector	Not in source	346,672 products; 217 distinct users; Formula $r_{ui} = \sum_{v \in U} S(u,v) r_{vi}$	Product discovery; Bidding and non-bidding behavior tracking; Data fusion	Performance evaluation of recommendation model	Not in source	Case study results demonstrate proficient performance	[2], [14]
Microsoft	Cloud & Data Engineering	MCID: 99587175	943 Modules; 216 Learning Paths; 756+ Training Hours	Azure AI Fundamentals; GitHub Copilot; Microsoft Fabric Administration	Certified AI & Cloud solutions	R1,500.00 (Azure AI Fundamentals)	Verified learning paths and certifications	[5]
Nogada Security Service	Private Security Industry	LTA 7.13	Grade A–F levels; PSIRA compliance	Asset in transit protection; CCTV monitoring; Firearm competency tracking	PSIRA accreditation; SASSETA accredited	R 87,163.71 (Total money due to council)	Pending Litigation; Compliance order issued	[2]
Metropolitan Police (UK)	Technical Surveillance / IP License	Ref: MIO 327	SQL Server Database, CCTV resolution (429 TVL, 512H x 582V)	Submission of Intellectual Property license request; forensic engineering	Under Review; Vetting / Security Clearance	Not in source	Candidate added to Talent Bank	[5, 19], [7, 8]
SAPS Radio Technical Unit	Radio Infrastructure Maintenance	TMS 36/2019	NQF Level 6; Communication Monitor, Signal Generator, Oscilloscope	Repairs, installation, and maintenance of radio	Security screening and fingerprint vetting required	Not in source	Vacancy active	[4]

				equipment at Radio High Sites				
National Instructional Media Institute (NIMI)	Electrician 4th Semester Trade Practical	NSQF (Level - 5)	Motor Drives, Inverters, UPS, Circuit Breakers, Relays	Practical theory training; Determination of resistance by colour code	Directorate General of Training (DGT)	Not in source	Completion of 48 exercises (525 Hrs)	[16]
SQA Academy	National 5 Skills for Work: Energy	Course Code: C258 75	24 SCQF Credit Points; Units: J12W 75, J12Y 75, J130 75, J12X 75	Career planning and employability skills tailored to energy sector	Automatic certification of core skills at SCQF Level 4	Not in source	Direct training or employment opportunities	[12]

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[3] 398987_Prospect student alu research 2 assessement thesisi experimental ,,.docx
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[7] 359173_Proposal of thesis content 2 final research(2).docx
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[10] new 4career engineering4.pdf
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Based on 50 sources

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idate	Name	n/College	/Faculty	tion/Level	Type	sment Score	tcome	Number	urce
2023-12-24	Tshingombe Tshitadi Fiston	St Peace College	Electrical Engineering	NQF Level 6	Portfolio Evidence	120 credits	Meets requirement	20191130002	[1]
2022-08-20	Tshingombe Tshitadi	St Peace College	Electrical Engineering	NQF Level 6	Statement of work experience	Satisfactory performance	Competency confirmed	90643	[2]
2021/12/01	Tshingombe Tshitadi Makangu Fiston	Shalom Technical College	Electrotechnics N4, Industrial Electronics N4	N4	Statement of Results	18, 19	Fail / Druip	2100002023812	[3]
2023/11/01	Tshingombe Tshitadi Makangu Fiston	Shalom Technical College	Industrial Orientation N3, Electro-Technology N3, Electrical Trade Theory N3	N3	Statement of Results	48, 55, 27	Pass/Fail	2100002023812	[3]
2021/12/01	Tshingombe Tshitadi Fiston	DHET / RSA	Electrotechnics N4, Industrial Electronics N4, Engineering Science N4, Mathematics N4	N4 Engineering Studies	Statement of Results	18, 19, 35, 29	Fail / Druip	210000203812	[4]

2020/12/01	Tshingombe Tshitadi Makangu Fistos	Afric Training Centre	Mathematics N1	N1	Statement of Results	5	Outs/Uits	2011007434332	[3]
2020/10/31	Tshingombe Tshitadi	St Peace College	Panel Electrical Wiring	Nated	Award Certificate	80%	Pass / Competent	COM 182609001	[3, 4]
2019-11-01	Tshingombe Tshitadi	DHET	Engineering Science, Trade Theory Electrical, Industrial Electronic, Mathematics	National Certificate N1-N6	Transcript/ Certificate	50%	Pass	Not in source	[1]
2022/02/12	Tshingombe Tshitadi	St Peace College / Afric Policing Institut	Applied Policing / Engineering	N3-N6	Complaint Form / Result Retention	Not in source	Results Retained / Under Investigation	INCO0002527705I / ID: 2100002023812	[4, 5]
2022/11/03	Tshingombe Tshitadi	St Peace College / Shalom Technical College	Engineering Electrical	NCV Level 4	Letter of Enquiries	Not in source	Irregularity/Collapse	TIRCOG000910610	[6]
09 Feb 2023	Tshingombe Tshitadi Fiston	St Peace College	Engineering Electrical / Education Technology	NQF 6 / NQF 7	Portfolio Evidence / Statement of Results	100 marks	Submitted / Assessment in progress	Not in source	[4]
2022/	Tshin	ETDP	Assesso	NQF	Assessor	Not in	Closed	TIRGOG000910	[6]

05/15	gombe Tshitadi Fiston	SETA	r Moderator Engineering Electrical	Level 6	Registration Form	source		610	
2023/05/08	Tshingombe Tshitadi	St Peace College	Engineering Electrical	N Diploma	Enquiry/Letter	Not in source	Under Investigation (Irregularity case)	2100002023812	[6]
2024-07-17	Tshingombe Tshitadi Fiston	St Peace College	Electrical Engineering	National N Diploma (N1-N6)	Qualification Portfolio / Evidence Log	Not in source	No meeting outcome	90674	[7]
2023	Tshingombe Tshitadi Fiston	St Peace College	Electrical Engineering	NATED N1-N6	Portfolio career research	Not in source	Completed research	Not in source	[6]
2023/04/05	Tshingombe Tshitadi	City Power / St Peace College	Engineering Electrical Assessor Learner	N4, 5, 6	NSF Application Template	Not in source	Application Submitted	Not in source	[6]
23 April, 2023	Tshingombe Tshitadi	St Peace College / City Power	Engineering Electrical	National Diploma (N1-N6)	Cover Letter / Career Outcome Request	Not in source	Requested experience/training completion	Not in source	[4]
2022/2023	Tshingombe Tshitadi	St Peace College	Engineering Electrical	N1, N2, N3 / N Diploma	Teaching and Learning Plan / Portfolio	40% Class work, 60% Exam	Completed / Qualify	Not in source	[6, 8]
2022-02-01	Tshingombe Tshita	Shalom Technical Center	Electrotechnics N4	N4	Admission Permit/Time-table	Not in source	External Examination	2100002023812	[1, 9]

	di Fiston								
2022/02/07	Tshingombe Tshitadi Fiston	Shalom Technical Center	Mathematics N4	N4	Admission Permit/Time-Table	Not in source	External Examination	2100002023812	[9]
2020/07/17 - 2020/07/21	Tshingombe Tshitadi	Afric Training Centre	Industrial Electronics, Engineering Drawing, Electrical Trade Theory, Mathematics	N1 Engineering Studies	Admission Permit / Examination Timetable	Not in source	External Examination	2004007064381	[4]
2024-04-17	Tshingombe Fiston	SAQA / QCTO	Engineering Studies	N4, N3, N5, N6	Email correspondence (Appeal)	Not in source	Pending verification	Not in source	[10]
2022/08/12	Tshingombe Tshitadi Fiston	SAQA	Foreign Qualifications Evaluation	NQF Level 6	Email correspondence / Evaluation Statement	360 Credits	Verification Rejected / Resubmission Required	202207085055 / 90674	[8, 9, 11]
2025-10-26	Tshitadi T and Tshitadi T	F1000Research	Career drawing total programming / Engineering and Education Tech	Research Paper	Published Document / DOI	Not in source	Published (Not Peer Reviewed)	doi: 10.7490/f1000research.1120368.1	[12 - 14]
2025-02-16	Tshingombe Tshitadi	Engineering Research Publication / IJETR	Engineering Electrical Trade Researc	Masters / Degree Honour	Accepted Manuscript	Not in source	Accepted (Pending Payment)	IJETR3147	[13, 15]

			h (Thesis) / Law						
2025-10-15	Tshingombe Engineering	NSF SBIR/STTR	Power Management (PM)	Fast Track	Pitch/Submission	Not in source	New (Active Submission)	00110596	[13]
2025-02-03	Engineering Tshingombe / Tshingombe Tshitadi	NSF SBIR/STTR	Adv. Systems for Scalable Analytics (AA)	Standard / Phase I Proposal	Pitch/Submission	Not in source	Decline	00097898	[13, 15]
2025-04-10	Engineering / Tshingombe Tshitadi	NSF SBIR/STTR	Energy Technologies (EN)	Standard / Phase I Pitch	Pitch/Submission	Not in source	Decline	00100839	[13, 15]
2025-08-15	Engineering Tshingombe	NSF SBIR/STTR	Other Topics (OT)	Fast Track	Pitch/Submission	Not in source	Decline	00107251	[13]
2025-10-04	Tshingombe Tshitadi Fiston	GitHub Copilot / Microsoft	Accelerate app development by using GitHub Copilot	Module assessment passed	Training Transcript	100%	Pass	46307064	[12]
2025-08-30	Tshingombe Tshitadi Fiston	Microsoft Learn	Machine Learning / AI	Module completion	Practice material log	100%	Completed	46307064	[12]
2023-	Tshin	ISC2	Cyberse	ISC2	Certificati	Not in	Issued	46307064	[14

11-14	gombe Tshitadi Fiston		curity	Candidate	on record	source			]
2025-10-08	Tshingombe Tshitadi Fiston	GitHub	CI/CD Contributor Badge	Badge	Certificate /Award	Not in source	Awarded	Not in source	[13]
08 February 2024	Tshitadi Tshingombe	South African Reserve Bank (SARB)	Artisan-Electronics CT	Not in source	Job Offer	Not in source	Successful application / Offer accepted	Job offer (99)	[4]
2014-05-08	Not in source	Eskom	Protective Services	Grade 12 / PSIRA Grade C	Job Vacancy Advertisement	T05	Not in source	329-1631109IS	[1]
2019-02-08	Tshitadi Fiston Tshingombe	Labour Court of South Africa	Applied Policing / Security Sector	Not in source	Court Judgement	Not in source	Case struck off the roll	JR2461/15	[11]
2024-11-14	Tshingombe Tshitadi	CCMA	Labour Relations / Dispute Management	Not in source	Mediation & Arbitration Notice	Not in source	Scheduled	JR 2461/15	[11]
2024-11-09	Tshingombe Tshitadi Fiston	SAPS (Hilbrow)	Criminal Follow-up / Security	Not in source	Affidavit / Case Reference	Not in source	Investigation status pending	CAS 297/11/2024	[11]
2024-06-25	Tshingombe Fiston	National Treasury (CSD)	Registration Process	Not in source	Email correspondence / Status update	Not in source	Resolved	1900050	[10, 16]
Not in	Tshingomb	City Power	Electrical	TVET Curriculu	Site Visit / Complaint	Not in source	Unresolved / 0%	CP 3297317	[11]

source	e Tshitadi	Johannesburg	Infrastructure / Trade Exposure	m			Resolution Rate		
Not in source	Tshingombe Tshitadi	African Institute of Police / Shalom College	Applied Policing	N-Diploma	Internal College Record	Not in source	Disputed Assessment	Not in source	[7, 8, 11]
Not in source	Tshingombe Fiston	Alison	Essentials of Electrical Safety	CPD Certified	Certificate	Not in source	Awarded	5273-37876299	[17]
2025-10-17	Tshingombe Tshitadi	F1000Research	Job Education Research Methodology	Not in source	Research Paper	Not in source	Published	version 1	[12, 14]
2023-11-16	Tshingombe Tshitadi Fiston	Microsoft Ignite / Teams	Build custom agents for Microsoft Teams	Learning path completed	Training Transcript	Not in source	Completed	46307064	[12]
2025-08-28	Tshingombe Tshitadi Fiston	AI Fluency / Microsoft	AI Fluency	Learning path completed	Training Transcript	Not in source	Completed	46307064	[12]
2024-07-01	Tshingombe Fiston	PSIRA	Private Security	Security Officer	Licensing application	Not in source	Inactive / In Progress	APP-6163228	[18]
2023/06/23	Tshingombe Fiston	Metropolitan Police Service	Development Operations Engineer	Band N	Application update	Not in source	Not eligible/Regret	17305	[16]

01/02/2024	Tshingombe Fiston	Shalom Technical College	N3 Engineering Studies	N3	Statement of Results	Not in source	Released / Failed subjects	Waybill: 080057034873	[4]
2022-03-18	Tshingombe Tshitadi Fiston	SAQA	Foreign Qualifications Evaluation	N3-N6	Email correspondence	Not in source	Pending re-submission	Not in source	[1]
2023/10/29	Tshingombe Tshitadi	Tshingombe Tshitadi Engineering	Engineering Electrical	Not in source	R&D Tax Incentive Report	Not in source	In-progress	9722328238	[19]
2024/06/24	Tshingombe Fiston	QCTO (Central Office)	Qualification-Programme Related	Not in source	Inquiry acknowledgement	Not in source	Inquiry received	2024-24-06-4401	[16]
2025-11-13	Tshingombe Tshitadi	IJETR (Vol 15 Issue 1)	Trade/Technical Documentation	Research Paper	Academic Manuscript	Not in source	Pending	IJETR3181, IJETR3182	[13]
2025-02-18	Tshingombe Tshitadi	IJETR (Vol 15 Issue 1)	Project engineering thesis master rural	Thesis/Paper	Academic Manuscript	Not in source	Rejected	IJETR3148	[13]
2025-04-17	Tshingombe Tshitadi	NRF Connect	Foundational Biodiversity Information	Concept Note	Grant Application	Not in source	Application Complete	FBIC250410310077	[15]
Not in source	Tshingombe Tshitadi	St Peace College	Applied Policing	NQF Level 6	Portfolio Evidence	Not in source	Evidence verified	Not in source	[12, 14]
2022-02	Tshingombe	St Peace College	Electrical Enginee	N4	Internal statement certificate	Not in source	Proof of internal examinati	Not in source	[2]

	Tshitadi		ring				on		
2023/02/20	Tshingombe Tshitadi Fiston	City Power / St Peace College	Engineering Electrical	N1-N6	Resume/CVS	Not in source	In progress	Not in source	[6]
2020-06-25	Not in source	Ekurhuleni Tech College	Technical Matric N3	N3	Registration Extension Email	Not in source	Registration Pending	Not in source	[1]
2023/09/17	Tshingombe Fiston	Not in source	Mathematic Informatic	Not in source	Email correspondence	Not in source	Not in source	Not in source	[6]

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Based on 10 sources

Date	Institu	Module /	Formula / Algorithm	Resul	Award /	Notes /	So

	tion	Item	(Inferred)	t / Status	Certificate	Integration Points	urce
2024-04-06	Atlantic International University (AIU)	Doctorate in Engineering - Specialist Infrastructure	$E=\int_{t1}^{t2} V(t)\cdot I(t)dt$	In Progress	Masters in Engineering Systems (NQF Level 8)	Thesis: Curriculum Integration and Career Mapping; Portfolio integration via LMS	[1]
2012-07-01	Cape Peninsula University of Technology / SAQA	Doctor of Technology: Engineering: Electrical (ID 78780)	Dissertation=Research+Knowledge Production	Replaced by ID 97019	Doctoral Degree (NQF Level 10)	Requires Master's Degree for entry; 240 credits	[2]
2025-10-08	Atlantic International University	MBM302 Master Thesis Review	Not in source	$300	Master of Engineering Systems – Thesis Accepted	Portfolio artifact submitted to LMS and AIU Library	[3]
16 May 2025	SQA	AH Engineering Science (X823/77/11) - Energy Systems / Amplifier Design	$P=31\cdot D\cdot Rds\cdot(ION2+ION IOFF+IOFF2)$	Assessment Scheduled; Section 1 - 35 Marks	Advanced Higher Engineering Science	Includes CHP efficiency and Amplifier Design; Linked to GitHub: Kananga5/engineering-theoretical-pratical-framework tshingombe	[4, 5]
2024 – 2025	SQA	Electrical Engineering	$V=I\cdot R$, $P=I2\cdot R$	Supervised, holisti	SCQF Level 7 (24 Credit Points)	NextGen HN v4.0; mapped	[5]

		Principles (SCQF Level 7)		c assessment		via SAQA/DHET standards	
September 2025	Ministry of Higher Education and Research (France)	BTS Electrotechnics (RNCP41007)	$\eta = P_{in} \quad P_{out}$	Registration Start	BTS Degree (NQF Level 5)	Focus on Smart Electrical Installations; replaces RNCP35346	[2]
2021-07-01	UMALUSI / SAQA	National Certificate: N2 Engineering Studies (ID 67375)	Pass Requirements=Cat A+Cat B+Cat C+Cat D	Passed End Date	National Certificate N2	Instructional offerings include Electrical Trade Theory 11041872	[2]
2019-12-05	South African Qualifications Authority (SAQA)	National Certificate: Electrical Engineering (ID 72051)	Total Credits=$\sum$Unit Standard Credits$\geq$133	Reregistered	National Certificate (NQF Level 3)	Replaces Qual 48475; articulation into NQF Level 4	[2]
August 2018	National Instructional Media Institute (NIMI)	Electrician 1st Year (Volume I) - Trade Theory - NSQF LEVEL 5	Ohm’s Law: $V = I \times R$	First Edition Published	NSQF Level 5 Certification	Government of India Ministry of Skill Development & Entrepreneurship	[2]
2018-07-01	QCTO / DHET	National Certificate: N4 Engineering Studies (ID 66881)	Eligibility=(N3 Cert)$\vee$(Senior Cert with 3 subjects)	Replaced by ID 122626	National N Certificate N4	Includes ElectroTechnics N4 (08080074)	[2]

January 2021	DHET (Report 191)	Electrotechnics N6	Promotion Mark=(ICASS×0.4)+(Exam×0.6)	Active Syllabus	Part of National N Diploma	Modules: DC Machines, AC Theory, Transformers, AC Machines	[2]
Not in source	SAQA / QCTO	National N Diploma: Electrical Engineering (90674)	PRMS =T1 ∫0T i(t)2dt	Pending recognition of foreign credits	NQF Level 6 (360 Credits)	WA Code competency framework (WA19-WE26); integration with ECSA candidate registration	[1]
2025-10-08	Schneider Electric / Eaton	EcoStruxure Smart Panel	Etotal =∫0T (Econv −Esmart)dt	R10,000	Certificate – Energy Management Compliance	Record submitted to GitLab audit log and Azure DevOps billing portal	[3]
2025-10-08	Eaton Power Advantage	9PX UPS System Sale	η=Einc Egen	R15,000	Certificate – Power Management Fundamentals	Record submitted to LMS and GitHub audit log	[3]
2024	Eaton	Power Xpert C445 Completion	C445 Logic=Diagnostic Fault Matrix	Completed	Completion Certificate	CPD recognition and professional portfolio	[4]
13 December 2024	Salesforce (IASME)	Cyber Essentials Plus	Status=IF(TODAY>ExpiryDate,"Expired","Active")	Active	CE-PLUS-2025-001	BlockMark Registry; Hash anchoring	[4]
Oct 4, 2025	GitHub / Microsoft	Accelerate app development by	Progress=(Total UnitsCompleted Units)×100	Pass Score: 100%	Beginner Developer .NET / APL-2007	Integrated with VS Code and GitHub	[6]

		using GitHub Copilot					Repositories for code improvement	
2025-10-08	GitHub	Reward Model Deployment – PRM	Fui =wo Oui +wa Aui +wb Bui		$80	Contributor Badge – RewardHub	Record submitted to GitHub audit log and Archive.org metadata index	[3]
Oct 26, 2025	F1000 Research	Career drawing total programming: Analysis, Design, Investigation	Pmax =4ZV2		Published (Version 1; Not peer reviewed)	DOI: 10.7490/f1000research.1120368.1	Affiliated with SAQA and AIU Online Library	[6]
17 October 2025	F1000 Research	Application trade discovery: Job education research methodology	DOI Anchor=10.7490/f1000research.1120369.1		Published	DOI: 10.7490/f1000research.1120369.1	Citable document; version 1	[4]
15 August 2025	F1000 Research	Drawing analyse design system	Result=Decision(Peer Review Policy)		Rejected	None	Poster submission failure	[7]
2025-10-08	ECSA / CCMA / Home Affairs	Professional Engineering Registration	Not in source		R1,000	Certificate – Registered Professional Engineer	Record submitted to CCMA dispute resolution log and Master Court archive	[3]
2025-10-08	Alison Learning	Diploma in Electrical	Not in source		$93.35	CPD Accredited Diploma – Electrical	Record submitted to	[3]

		Engineering			Engineering	SAQA/NQF dashboard and GitHub credential repository	
2025-10-08	Shoprite / CNA / Elektor	Elektor Electronics Starter Kit	T=∫0N ti di	R360	Certificate – Electronics Fundamentals	Record submitted to GitHub credential repository and SAQA/NQF dashboard	[3]
3 November 2025	Archive.org	Design Career 10 Application Trade Drawing	Scale=Actual SizeDrawing Size	Open Source	Creative Commons BY-NC-SA 4.0	Integrated with UserForm190000002; identifier: design-career-10-application	[6, 8]
15 October 2025	SQA	Engineering Career Discovery Journey	Progress=Total Modules Completed Modules ×100	Completed	Not in source	Integration with GitHub and Internet Archive	[4]
2024–25	SQA	National 5 Engineering Science Assignment: Leisure Pool Complex	Velocity Ratio=Input Gear TeethOutput Gear Teeth	50 out of 160 total marks	National 5 Certificate	8-hour duration; SCN-labeled evidence printed on A4	[5]
15 March 2026	SQA (Virtual Work Experience)	Responsible Business Task: Communi	Risk Rating=Likelihood×Severity	Planning Phase	SQA Academy Module Achievement	Glasgow Hidden Gardens; automated via	[5]

		ty Garden				UserForm (SQAForm)	
Feb 2025	SAQA / DHET	National Learners' Records Database (NLRD) Expansion	Verification Rate=Total Requ estsFulfilled Requests ×100	68% verification	NQF 5-Year Target Achievement	Audit Traceability; 24.5 million learner achievements reflected	[8]
2021	Schneider Electric	Industrial Automation & Sustainability Training	Efficiency=Input PowerOutput Power ×100	Completed	LMS-integrated Certificate	Mapped to WA codes and SAQA sustainability descriptors	[1, 9]
2023	Microsoft	Digital Credentialing & LMS Strategy	Binary State∈{0,1}	Completed	Copper Contributor / Solver Badge	Microsoft Learn pathways; Reddit API integration research	[1, 9]
14 January 2024	Schneider Electric	Physical Infrastructure Management Basics Quiz	Score=10Correct Answers × 100	30% (Failed)	Not in source	Managed via Cornerstone OnDemand LMS	[4]
22 January 2024	Schneider Electric	Robotics (Test)	TCP Position=f(IF_Feedback)	44% (Failed)	Not in source	Integration with IF_Feedback and IF_Motion interfaces	[4]
2016-10-06	French Ministry of National Education	Competency Block Certification (CAP, Bac Pro, BTS)	Diploma=∑Competency Blocks	Implemented	Professional Certification	Validation of Prior Experience (VAE) integration	[2]
2017-01-01	URFIST Paris / École	Invention Patents Tutorial -	Patentability=Novelty+Utility +Inventive Step	Available Onlin	Not in source	http://urfist.enc-sorbonne.fr	[2]

	nationale des chartes	Module 8		e		/les-brevets-d-invention/	
2025-10-08	Metropolitan Police UK	CCTV Footage for Research	Rate=k[A]m[B]n	£300	Publication Approved – F1000Research	Record submitted to ORCID registry + MOPAC Archive	[3]
2024-07-21	Department of Justice (DOJ)	Civil Law Case URN 112024CIV000005	Procedural Adherence=∑(Affidavit+Transcript+Evidence)	Pending Review	Not in source	Linked to career claims and trade qualifications	[9]
2018-04-03	Labour Court of South Africa	Case JR2461/15 (Tshingombe vs Nogada Security)	Outcome=f(Attendance,Affidavit Compliance)	Struck off	No cost order issued	Includes certified transcription (8 pages, 1 CD); CCMA awards	[9]
2023-11-09	South African Police Service (SAPS)	Case CAS 297/11/2024 (Hilbrow)	f=ma+mg	Investigation Requested	Not in source	Involves ID theft and wallet loss; linked to security application	[1, 9]
2025-06-12	Masters Office, Johannesburg	Trust Registration Summary URN 9922025TRU000436	Compliance=Total Required DocumentsVerified Documents	Submitted	Not in source	Trust Name: Tshingombe; 3-month submission deadline	[9]
2025-10-08	SASSETA / CCMA	Labour Law Training Module	Not in source	R800	Certificate – Workplace Dispute Resolution	Record submitted to MERSETA dashboard and Home Affairs	[3]
2025	NRF /	MATLA	Not in source	R4,00	IJETR3156 –	Portfolio	[3]

-10-08	AIU	B Research License			0	Paper Accepted	artifact submitted to NRF dashboard and AIU Library	
Not in source	Salesforce / SAQA	Engineering Theoretical/Practical Framework Assessment	Z=rg	+jxd	Modular Marking	Trailhead Workforce Badge	Tableau/Trailhead mapping; SAQA ID 72052/90674	[5, 6]
Not in source	Salesforce (Inferred)	Credential and Patent Recommendation Tracking	If Credits≥90 then Certified		Logic Developed	Teaching Authorization Ready	Integrated with UQAM Registrariat for Teaching Certificates	[2]

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Engineering Prof Civil Auxiliary Plant (Generation) Lethabo Power Station	2024/09/25 10:14 AM	Eskom	Generation	Lethabo Power Station	[6, 7]
Engineering Prof Civil Auxiliary Plant (Generation) Lethabo Power Station	Not in source	Eskom	Generation	Lethabo Power Station	experimental scheiner university summary Product Selector Tool(1)(1).docx, [8], Portofolio evidence low dhet saqa su(2).docx [User Description Context]
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Engineer Prof Eng Quality of Supply (National Transmission Company South Africa) Newscastle	2024/09/01 01:43 PM	National Transmission Company South Africa	National Transmission Company South Africa	Newcastle	[4], sharepoint@eskom.co.za Sun, Sep 1, 2024 [9]

Engineer Prof Engineering (NP)Distribution Bloemfontein	2024/05/19 09:38 AM	Eskom	Distribution	Bloemfontein	[4]
Engineering in Training (Generation) Megawatt Park	2023/12/19 11:00 AM	Eskom	Generation	Megawatt Park	course ciriculum total course thesis alumine(2)(1).docx [1]
Engineering Professional (Generation) Megawatt Park	2024/08/02 02:44 PM	Eskom	Generation	Megawatt Park	[6, 7]
Engineer-in-Training-Control and Instrumentation AND-Auxiliary and Ancillary-(Peaking Durbanville)-X2	2024/09/01 01:40 PM	Eskom	Peaking	Durbanville	[4]
Engineer-in-Training-Control and Instrumentation AND-Auxiliary and Ancillary-(Peaking Station	2024/09/01 01:40 PM	Eskom	Peaking Station	Not in source	sharepoint@eskom.co.za Sun, Sep 1, 2024 [9]
Engineers in Training X09_ Electrical HC x2_ C and I x3_Mechanical or Chemical x3_Industrial Engineering x1 (Gx Kusile Powe	2024/05/19 09:36 AM	Eskom	Generation	Kusile Power Station	[4]

[1] course ciriculum total course thesis alumine(2)(1).docx
[2] portofolio career ,Research college engineering career joint gov compagny department(4).docx
[3] Dear valued employer(2).docx
[4] experimental City Power tshingombe.docx
[5] letter employment self assement , Incidence eaton employement.docx

[6] All notes 11/18/2025
[7] f1000research-757660.pdf
[8] Book1 EXCELLEXAMINATIONREGISTER SUPPLY ST PEACE STtement diplomat.xlsx - Sheet2.pdf
[9] ACFrOgAJMfh9xwDrlGM_5LlxjpkWwe5ufW87iWmMyLwVLmOEvyAWZaQG3YSs92Fmo5wDo6MYUJIWn06KqksEqzKuBHvF7lnbLNIPYMVwDOUyRhIBgJ14FrccQqGDHbjio4OCf-ftW35T1kdkbhx5tw8LaTl-3D9F4zQY5rPJBQ==.pdf

Based on 50 sources

Item ID	Title or Description	Category	Software Component Type	Associated Labels/Tags	Project Source Code Reference	Status/Outcome	Source
JGU5FH	Web-Based Crime Management System for Samara City Main Police Station	Law Enforcement / Computer Science	Web-Based Information System	Open Peer Review, Preprint, Samara City, Police	Not in source	Altmetric score of 2, 29 peer reviewers, Open Peer Review (2.79 score | 29 reviewers)	[1-3]
Kfrm6	Biometric scan and security validation	Law Enforcement / Computer Science	VBA UserForm	Biometric, Security	Private Sub cmdScan_Click()	Biometric scan passed (simulated), Simulated success (Flag = 1)	[1, 4]
Kfrm1	Initial registration (name, surname, ID, cellphone)	Computer Science / Information Management System	VBA UserForm	IMS, registration	Private Sub cmdNext_Click()	Active	[1, 4]
Not in source	Generate SHA256 Hash	Computer Science	VBA Function	SHA256, Security, Hash	Function GenerateSHA256	Certificate issued	[1, 2]
Not in source	Op amp	Engineer	VBA	Electronics	Function	Not in	[1,

	closed loop gain - non-inverting amplifier	ing	Function	, Op amp, gain	K_op_non(R1, R2)	source	2, 5]
Not in source	Triangle Wave Generator	Engineering	VBA Function	Waveform, Voltage	Function Tri_Wave(t, V1, V2, T1, T2)	Not in source	[1, 2, 5]
83	Engineering nated nvc excell research tvet	Engineering	Azure DevOps Work Item	engineering, nated, nvc, excell, research, tvet	Not in source	Not in source	[6, 7]
81	Enginering visual basic	Computer Science / Engineering	Azure DevOps Work Item	visual basic	Not in source	Not in source	[6, 7]
Not in source	Capture user input for fault code	Engineering	TextBox	FDR-TRP, Fault Isolation, Protocol accepted, Feeder tripped	Private Sub TextBox9_KeyDown	Protocol accepted / Feeder tripped	[1, 2]
Not in source	Smart Grid Enhanced with AI	Engineering	VBA Dashboard / AI Module	Smart Grid, AI, IoT	Sub ReadControlPort()	Real-time simulation	[8, 9]
1165	IT Asset Management Administrator	Administrative	Azure DevOps Work Item	Active, BSTD, Compliance automation	Not in source	Active	[1]
1208	Associate Resolution Planning Specialist	Law Enforcement	Azure DevOps Work Item	Active, Fin Stab, Risk-based compliance	Not in source	Active	[1]
IJETR3147	Paper accepted by IJETR	Engineering	Journal Article	publication, electrical	Not in source	ACCEPTED / PAID (18 Feb 2025)	[10]
72071	National	Engineer	SAQA	NQF Level	Not in source	Active	[10]

	Certificate: Electrical Engineering: Mining	ing	Qualification	3, SAQA ID 72071			
DOJONLINEEST202408061672	Student ID applied appeal home affairs work permit conditions	Law Enforcement	ICT/System related	Deceased Estate	Not in source	In Progress	[11]
1042024CIV004539	Tshingombe tshitadi Civil Law case created Aug 5 2024	Law Enforcement	Not in source	Civil Law	Not in source	Screen Application	[11]
1042024CIV004511	Tshingombe tshitadi Civil Law case created Aug 5 2024	Law Enforcement	Not in source	Civil Law	Not in source	Screen Application	[11]
4702024FCV001046	Domestic Violence Protection Order Case Tshingombe Tshitadi	Law Enforcement	Not in source	Domestic Violence	Not in source	Screen Application	[11]
Uc1	Create Account for already-registered users	Law Enforcement	Not in source	Login	Not in source	Account successfully created	[3]
90004444	Career totand and trade portoloio	Engineering	VBA UserForm	career, trade, portfolio	Not in source	Not in source	[1]
86	Discovery	Engineer	Azure	discovery,	Not in source	Not in	[6]

	career science technical engineering	ing	DevOps Work Item	career, science, technical, engineering		source	
85	Engineering trade programe	Engineering	Azure DevOps Work Item	engineering, trade	Not in source	Not in source	[6]
82	Engineering visual excell ms word	Engineering	Azure DevOps Work Item	visual basic, excell, ms word	Not in source	Not in source	[6]
80	Engineering visual basic data system	Computer Science	Azure DevOps Work Item	visual basic, data system	Not in source	Not in source	[6]
Not in source	Applied Policing & Crime Prevention	Law Enforcement	Academic Module	policing, crime	Not in source	Completed at Africa Policing Institute	[10]
Not in source	Crime Scene & Incident Investigation	Law Enforcement	Academic Module	investigation, forensic	Not in source	Completed	[10]
Not in source	Address and birthday capture	Information Management System	VBA UserForm (Kfrm2)	address, capture	Private Sub cmdSend_Click()	Active	[4]
Not in source	Account login and password recovery	Information Management System	VBA UserForm (Kfrm4)	login, recovery	Private Sub cmdLogin_Click()	Active	[4]
Not in source	Sine Wave Generator	Engineering	Function	Waveform	Function SineWave	Not in source	[1]
Not in source	Basic Software Engineering Concept Solve Electrical	Engineering	Arduino / PBasic	Logic Gates	void loop()	Evidence requirement	[12]

	Engineering Problem						
Not in source	career project implementation framework design	Engineering	Academic Submission	F1000Research	Not in source	REJECTED (11 Apr 2025)	[10]
Not in source	Research education technology and research engineer electrical	Engineering	Academic Submission	F1000Research	Not in source	REJECTED (09 Feb 2025)	[10]
Not in source	TextBox Control Event	Computer Science	VBA TextBox	UserForm, Trade	Private Sub TextBox10_Change()	Not in source	[4]
Not in source	Frame Click Event	Computer Science	VBA Frame	UI Component	Private Sub Frame1_Click()	Not in source	[4]
Not in source	Automated student's registration form in excel and vba	Computer Science	VBA UserForm	frm dataentry	Sub reset_form()	Not in source	[12]
Not in source	Simple calculation in visual basic first create an interface	Computer Science	TextBox	txt input	Private sub button 23_click	Not in source	[12]
Not in source	PLC communication programme and read data	Engineering	C# Program	PLC	Macro3	Not in source	[12]
Not in source	UserForm for Student Registration Form	Computer Science	Label	student name	Private sub label 12_click	Not in source	[12]

Not in source	Label for requirement component tools	Engineering	Label	REQUIREMENT COMPONENT TOOLS	Private Sub Label11_Click()	Not in source	[2]
Not in source	Crime Management Systems and Sector Policing Management	Law Enforcement	Crime Administration System (CAS)	GP 38/3/17	Not in source	Not in source	[11]
Not in source	Applied Policing and Crime Resolution module	Law Enforcement	VBA UserForm element	txt_label3=true	Not in source	Not in source	[13]

[1] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[2] TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE,,, framework.pdf
[3] UserForm17 police student registrar tshingombe tank ,,career.frm3.pdf
[4] UserForm total career outcom 90000333 , completed tota.frm to trade.frmt5.pdf
[5] UserForm16 tshingombe circuit trade theory readness job.frm 2.pdf
[6] Work items - Boards azure.pdf
[7] Work items - Boards azure tshingombe.pdf
[8] TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE.pdf
[9] userform 999908888 integrator intelligence module career.pdf
[10] new career engineering.pdf
[11] tshingombe REPUBLIC OF SOUTH AFRICA.docx
[12] Doc13 design tshing.docx
Based on 50 sources

Object Name	Label Caption	Associated Functionality	Project Context	Data Input Type	Source
TextBox1	Product Name	Capture product name for SHA256 generation	Product Certification System	String	[1]
TextBox2	SHA ID	Display generated SHA256 ID; check for certificate issuance	Product Certification System	String	[1]
txtName	Name	Input field for user's first name	IMS Registration (Kfrm1)	String	[1]
txtID	ID	Input field for identification number	IMS Registration (Kfrm1)	Integer/String	[1]

cmdScan	Scan	Simulate biometric scan success (biometricFlag = 1)	IMS Biometric Validation (Kfrm6)	Boolean (Inferred)	[1]
chkDeleteUnread	Delete unread copies	Triggers attempt to delete unread email copies	Email Message System	Boolean	[1]
txtAssessmentScore	Assessment Score	Score validation (>= 70 for Pass)	Certification Assessment Form (Kfrm)	Integer	[1]
txtQuantity	Quantity	Calculation of subtotal; validation of numeric input > 0	Customer Transaction System	Double	[1]
txtX	X Coordinate	Robotic kinematic movement; axis validation (>= 0)	Robotic Control Interface	Double	[1]
cboPLCCommand	PLC Command	Select Start, Stop, or Reset command logic	Robotic Control Interface	Selection	[1]
Label20	SI Number	Reference for Oscillator/Radio/TV components	Trade Theory Lab	Integer (Inferred)	[1]
cmdNext	Next	Proceed to Kfrm2 and Hide current form	Information Management System (IMS) - Kfrm1	Boolean	[2]
txtName	Name	Capture user first name	Information Management System (IMS)	String	[2]
txtSurname	Surname	Capture user surname	Information Management System (IMS)	String	[2]
txtID	ID	Capture user ID number	Information Management System (IMS)	String	[2]
txtCellphone	Cellphone	Capture cellphone number	Information Management System (IMS)	String	[2]
cmdSend	Send	Validate address/birthday and show Kfrm3	Information Management System (IMS) - Kfrm2	Boolean	[2]
txtAddress	Address	Capture user address	Information Management System (IMS)	String	[2]

txtBirthday	Birthday	Capture user birth date	Information Management System (IMS)	String	[2]
cmdLogin	Login	Validate credentials and show Kfrm5	Information Management System (IMS) - Kfrm4	Boolean	[2]
txtUsername	Username	Capture login username	Information Management System (IMS)	String	[2]
txtPassword	Password	Capture login password	Information Management System (IMS)	String	[2]
cboName	Select Name	Load selected name into txtName	Information Management System (IMS)	String	[2]
cmdOK	OK	Validate required fields and show frm2	Information Management System (IMS)	Boolean	[2]
cmdCancel	Cancel	Unload the current form	Information Management System (IMS)	Boolean	[2]
txtTo	To	Capture email recipient	Email Message System	String	[2]
txtSubject	Subject	Capture email subject line	Email Message System	String	[2]
chkDeleteUnread	Delete unread copies	Logic to delete unread email copies	Email Message System - Recall	Boolean	[2]
chkAutoReply	Activate auto replies	Triggers out-of-office automated responses	Email Message System	Boolean	[2]
cboStatus	Status	Display and select Passed/Failed result	Certification Assessment Form	String	[2]
txtAssessmentScore	Assessment Score	Capture numeric score and determine pass/fail	Certification Assessment Form	Integer	[2]
txtPhone	Phone Number	Applies input mask (000)000-0000	Information Management System	String	[2]
txtQuantity	Quantity	Input validation for numeric transaction quantity	Customer Transaction System	Integer	[2]
cmdMove	Move	Validates X, Y, Z	Robotic Control	Boolean	[2]

		coordinates and triggers servo	Interface		
cboPLCCommand	Select PLC Command	Executes Start, Stop, or Reset logic	Robotic Control Interface / PLC	String	[2]
Label1	student ,name	Label_Click	student registration form	String	[3]
txt student name	Student's name	.txt student name.text=" "; Txt student name backcolor +vb white	Automated student's registration form	String	[3]
txt father name	Father name	Txt father name .text =""; Txt father name back color + vb white	Automated student's registration form	String	[3]
txt dob	Date of birth	Txt dob text =""	Automated student's registration form	String	[3]
pin box	PIN CODE	If pin box .text+"9343" then Transaction group . enabled+ true	VISUAL BASIC ATM PROGRAM	Integer	[3]
CommandButton1	submit	CommandButton1_Click	Automated student's registration form	Boolean	[3, 4]
TextBox1	student name	Capture student name	Thesis (Student Register)	String	[5]
TextBox3	father name	Capture father's name	Thesis (Student Register)	String	[5]
txtDOB	date of birthday	Trigger DatePicker for birthday selection	Thesis (Student Register)	String (Date)	[5]
txtMobile	mobile number	Capture 10-digit numeric mobile number	Thesis (Student Register)	Integer	[5]
txtEmail	email adress	Capture and validate email address format	Thesis (Student Register)	String	[5]
optFemale	femele	Select gender as Female	Thesis (Student Register)	Boolean	[5]
txt_label 4	Applied Policing and Crime Resolution	Display Crime Scene Management text	Crime Management System	String	[6]
txt_label9	Operational Performance in Traffic	Verification of performance data	Crime Management System	Boolean	[6]

	Management				
TextBox9	Not in source	KeyDown; Protocol acceptance check (IEC61850) or Feeder trip isolation (FDR-TRP)	IED configuration / Fault isolation system	String	[1]
cmdNext	Next	Validation check for fields; show Kfrm2; hide Me	Information Management System (IMS) - Kfrm1	Not in source	[1]
cboName	Not in source	Update txtName.text on change	IMS User Form Document	Selection	[1]
Label8	Mounted	Procedure Construction step display	Trade Theory Lab	Not in source	[1]
Frame1	OK CANCEL NEXT	Form navigation group	Trade Theory Lab	Not in source	[1]
Frame1	Not in source	Click event	UserForm total career outcome	Boolean	[2]
ScrollBar1	Not in source	Change event	UserForm total career outcome	Integer	[2]
TextBox10	Not in source	Change event	UserForm total career outcome	String	[2]
KfrmArchiveIPValidator	Not in source	Implementation of SHA-256 hash function	Record Management Engine	String	[7]
txt input	Not in source	val (txt input.text); text input .focus()	Simple calculation in vb visua basic	Double	[3]
cmd decimal	Not in source	cmd decimal click; ifb in str (txt inpout .tex ".")>0 then exit sub	Simple calculation in vb visua basic	Boolean	[3]
cmd clear	Not in source	checking , value , by value handles cmd clear; Txt input text =" "	Clear function	String	[3]
TextBox1	Not in source	TextBox1_Change; TextBox1_KeyPress (logging keypresses)	frm1 - 1 / Thesis Project Documentation	String	[3]
TextBox11	Not in source	TextBox11_Change	UserForm8 - 1	String	[3]

x1	Not in source	x1 text ="0"or "1"	UserForm2tshingombe registration statenmt x1	Boolean	[4]
TextBox1	Not in source	Capture product name for SHA256 ID output	Trade Theory Lab	String	[8]
TextBox2	Not in source	Generate SHA256 code/SHA ID output	Trade Theory Lab	String	[8]
TextBox9	Not in source	Capture user input for fault code/Protocol validation (IEC61850 or FDR-TRP)	Trade Theory Lab	String	[8]
Label2	requirement	Display text 1 requirement	Trade Theory Lab	Not in source	[8]
Label3	train kit	Display text 2 train kit	Trade Theory Lab	Not in source	[8]
Label4	material copp	Display text 3 material copp	Trade Theory Lab	Not in source	[8]
pinBox	Not in source	Enter ATM PIN (9343)	Thesis (ATM System)	Integer	[9]
1A	Not in source	ReadControlPort() for SCADA register	Thesis (Intelligence Module)	Byte	[10]
1B	Not in source	ToggleSCADASwitch()	Thesis (Intelligence Module)	Boolean	[10]
lblStatus	Not in source	Display metadata validation success message	Thesis (Personal Knowledge Management System)	String	[11]
Label11	Not in source	Click event	Career Portfolio UserForm	Not in source	[1]

[1] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[2] UserForm total career outcom 90000333 , completed tota.frm to trade.frmt5.pdf
[3] Doc13 design tshing.docx
[4] UserForm2tshingombe registration statenmt x1.pdf
[5] user form 6. student register 3 tshingombe.pdf
[6] UserForm14 policy project excell word cae macro , tshingombe.frm2.frm1.pdf
[7] new career engineering.pdf
[8] TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE,,, framework.pdf
[9] UserForm1 5tshingombe atm.pdf
[10] userform 999908888 integrator intelligence module career.pdf
Based on 38 sources

Credential	Awardin	Field of	NQF	Status or	Key	Date	Sour

Title	g Body	Study	Level or Equivalent	Achievement	Competencies	Earned	ce
National N Diploma: Electrical Engineering	DHET / SAQA / St Peace College	Electrical Engineering	NQF Level 6	Completed	Engineering Science, Mathematics, Electrical Trade Theory, Industrial Electronics, Electrotechnics, Plant Operation	Not in source	[1-3]
Trade Test Certificate	DHET / QCTO	Electrical Trade	Not in source	Completed	Fault Tracing, Motor Control, Transformer Rewinding	Not in source	[2]
Industrial Automation & PLC Training	Schneider Electric	Industrial Automation	Not in source	Completed	PLC configuration, EcoStruxure Power, energy modeling and verification, Drives fundamentals, Mounting & Cabling, Error & Warning Handling, PID Control	Not in source	[2, 3]
Cloud & Data Engineering	Microsoft	Computer Science / Information Systems / Cloud Computing	MCID: 99587175	Completed	Introduction to Data Engineering on Azure, Secure data and manage user in azure synapse,	Not in source	[1, 3]

					Azure Test Plans		
National Certificate: N3 Engineering Studies	DHET / SAQA	Electrical Engineering	NQF Level 3	Completed	Electrical Trade Theory, Engineering Science, Mathematics	Not in source	[3]
Master of Eng. Systems - Thesis Accepted	Atlantic Intl. University	MBM302 Master Thesis Review	Not in source	Completed	Engineering Systems Analysis	2025-10-08	[1]
Cyber Essentials Plus	BlockMark Registry	Cybersecurity & Digital Trust	UK Cybersecurity Standards	Completed	Digital Security, Compliance	2025-12-13	[1]
Registered Professional Engineer	ECSA / Home Affairs	Engineer Registration	Not in source	Completed	Professional Engineering, Compliance	2025-10-08	[1]
Workplace Dispute Resolution	SASSETA / CCMA	Labour Law Training	MERSETA Aligned	Completed	Labour Law, Dispute Resolution	2025-10-08	[1]
Basic Electrical Safety	Sci-Bono Discovery Centre	Electrical Wiring Kit	SAQA/NQF Level 4	Completed	Industrial Automation, Energy Management	2025-10-08	[1]
SASSETA Assessor / Moderator Certificate	SASSETA / PSiRA	Engineering Fabrication / Security Management	Not in source	Completed	Assessment and quality assurance in engineering and security sectors	22 December 2024	[3]
Google Classroom Fundamentals	Google	Educational Technology	Not in source	Completed	Google Classroom usage	October 26, 2023	[4]
From Idea to Reality: A Comprehensive Guide to Setting Up Your Own Company	Atlantic International University (AIU)	Entrepreneurship	Not in source	Completed	Business development and engineering consultancy services	13 Oct 2023	[3]

Energy Mgmt Compliance	Schneider Electric	Smart Panel	Not in source	Completed	Energy Management Compliance	2025-10-08	[1]
Trailblazer Superbadge - Data Cloud	GitHub / Azure DevOps	CI/CD Pipeline Subscription	Not in source	Completed	Cloud Computing, Data Management	2025-10-08	[1]
Diploma in Robotics	Alison	Robotics & Automation	Not in source	Completed	Industrial Automation, Robotics	Not in source	[1]
Diploma in Mechatronics	Alison	Mechatronics	Not in source	Completed	Mechatronic Systems, Signal Conditioning	Not in source	[1]
Diploma in Teaching Skills For Educators	Alison	Pedagogy	Not in source	Completed	Instructional Design, Educational Theory	Not in source	[1]
ISO 37301:2021 principle of compliance management system	Alison	Compliance Management	Not in source	Completed (91%)	Compliance management principles	Not in source	[3]
Electrical Transformer Components	Alison	Electrical Engineering	Not in source	Completed (86%)	Transformer components and maintenance	Not in source	[5]
GitHub Administration	GitHub	DevOps	Not in source	Completed	Roles, Access Control, Repo Management	Not in source	[2]
Sustainable Sourcing Protocols	Not in source	Ecotechnology	Not in source	Completed	Traceability, Chain-of-custody, Ethics	Not in source	[2]
Azure AI Fundamentals (AZ-900)	Microsoft	Cloud Computing	Not in source	In Progress	Machine learning, Generative AI, AI principles	Scheduled	[2]
Security Operations	Microsoft	Cybersecurity	Not in source	In Progress	Zero Trust, Threat	Scheduled	[2]

Analyst (SC-900)					Modeling, Security Compliance		
ASHE: Energy Manager	Schneider Electric	Energy Management	Not in source	In Progress	IPMVP, Power Factor Analysis, Retro-commissioning	Not in source	[2]
UCPD/UCD Trade Replacement	SAQA	Professional Development	Not in source	In Progress	Exemption mapping, Trade-based assessment	Not in source	[2]
Advanced diploma of electrical technology and circuit analysis	Alison	Electrical Technology	Not in source	In progress (3%)	Circuit analysis	Not in source	[3]
National Research Foundation (NRF) Grants	National Research Foundation	Engineering Research	Not in source	In Progress / Under Review	Not in source	2025	[3]
Diploma in electrical studies	Alison	Electrical Engineering	Not in source	In progress (12%)	Not in source	Not in source	[3]
Basic Machines with PacDrive 3	Schneider Electric	Robotics	Not in source	Rejected/Declined	Motion Block, Robotics control	Not in source	[2]
NSF I-Corps Program Application	National Science Foundation (NSF)	Technical Innovation	Not in source	Declined/Rejected	Not in source	February 14, 2025	[3]

[1] new 3career engineering3.pdf
[2] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[3] new career engineering.pdf
[4] tshingombe tshitadi engineering and education technology engineering.pdf
[

Based on 38 sources

Credential/Pr	Categor	Organization/Pla	National	Key	Status/Achieve	Sour

oject Name	y	tform	Framework Level	Competencies/ Skills	ment	ce
National N Diploma: Electrical Engineering (N4-N6)	Academic	St Peace College / DHET / SAQA / QCTO	NQF Level 6	Mathematics, Engineering Science, Electrical Trade Theory, Industrial Electronics, Electrotechnics, Plant Operation, Cable sizing, transformer modeling, fault tracing	360 Credits; Awarded (requires 24 months practical experience); Distinction/Pass (Credits achieved: 9.57)	[1], [2]
Master of Eng. Systems - Thesis Accepted	Academic / Research	Atlantic Intl. University (AIU)	NQF Level 9	Education Technology Rural Implementation Framework, research engineering electrical	Accepted / Status: Submitted	[3]
National Certificate: N3 Engineering Studies	Academic	SAQA / DHET	NQF Level 3	Electrical Trade Theory, Engineering Science, Mathematics	Verified under SAQA ID 67491	[2]
Mathematics N1-N6	Academic / Engineering Science	St Peace College / DHET / NATED	NQF Level 5-6 (SAQA ID 67491)	Integral and differential calculus, Modeling project management, Renewable energy systems modeling	Passed	[3]
Industrial Electronics	Academic / Technical	St Peace College / DHET / NATED	NQF Level 5 (SAQA ID 637375)	AC/DC Machines & Transformers, testing and maintenance	Pass	[3]
Electrical Trade Theory	Academic /	St Peace College / DHET / NATED	NQF Level 4	Circuit design & analysis,	Pass (N3: 55%)	[3]

	Technical		(SAQA ID 6710)	Resistive, Inductive and Mixed circuits, Kirchhoff's & Ohm's Laws		
Certificate in Electrical (Safety, Design & Sockets)	Technical / Vocational	St Peace College	NQF Level 5 Alignment	Panel wiring, distribution boards, motor controls, SABS 0142 standards	Passed	[3]
Microsoft Learn AI Fluency Path	AI / Digital Skills	Microsoft Learn / Sci-Bono ICT Academy	Not in source	AI basics, Generative AI, responsible AI, Azure AI Foundry SDK, Copilot productivity, AI patterns, Machine Learning models, Microsoft Fabric, Azure Synapse, Power BI Deployment	Level 17 (1,483,625 XP, 943 Badges); Completed; MCID: 99587175	[1], [3], [2]
Schneider Electric Industrial Systems Training	Industrial / Technical	Schneider Electric	Not in source	EcoStruxure Automation Expert, PowerLogic Protection Engineering, Modicon Switches, Altivar Machine Professional, Harmonics & EMC, Mounting & Cabling (ATV340), PID Control, Speed Ramps	Completed 140+ modules; 14.15 aggregate training hours; In Progress / Active Training	[1], [2]
Information Management System (IMS)	Technical / Software Architect	Visual Basic / VBA-Powered	Not in source	Modular VB architecture, Secure registration,	Prototype / Inventor / Modularized into legacy-	[1], [3], [4]

	ure			Biometric validation, Event-driven subroutines, Database design (Access), Email automation, audit-ready data handling	ready documentation	
Web-Based Crime Management System (WBCMS)	IT / Research Project	Samara City Main Police Station / Atlantic International University	Not in source	System design (UML), PHP, MySQL, Object-Oriented Analysis, Web Security, client-server architecture	Proposed system / Research preprint archived (Dec 11, 2023)	[1], [5]
Diploma in Robotics	Academic / AI	Alison	Not in source	Kinematic movement (X, Y, Z), PLC control, Servo mechanisms, automation Triggers	Completed / Verified	[3]
Diploma in Mechatronics	Academic / Technical	Alison	Not in source	Signal conditioning, operational amplifiers, analogue-to-digital conversion	Completed / Verified	[3]
Diploma in Software Engineering	Technical / Software	Alison	Not in source	C++, C#, Python, repository management via Git/GitHub	Completed / Verified	[3]
Diploma in Electrical Studies	Academic / Technical	Alison	Not in source	Electrical technology and circuit analysis	Completed / 91% (ISO 37301 compliance module certified)	[2]
Diploma in Teaching Skills For Educators	Academic / Pedagogy	Alison	Not in source	Constructivism, Motivation Theory, Instructional	Completed / Verified	[3]

				Design, Taxonomies of Learning		
Registered Professional Engineer	Professional Certification	Engineering Council of South Africa (ECSA)	Not in source	Engineering registration, CPD activities, Compliance with professional standards	Final Cost: R1,000	[3]
SASSETA Assessor & Moderator	Professional Certification	SASSETA / PSIRA	Not in source	Quality assurance, curriculum design, assessment moderation	Registered/Certified (ID: TIRCG00091061010)	[2]
Energy Mgmt Compliance (Smart Panel)	Technical / Industrial	Schneider Electric / ASHE	Not in source	Power management, automation, EBO 2023 engineering, energy efficiency audits, IPMVP, power factor analysis, retro-commissioning	Final Cost: R10,000; In Progress	[1], [3], [6]
Cyber Essentials Plus Certification	Security / Technical	BlockMark Registry	Not in source	Digital security competence, compliance with UK cybersecurity standards	Active (Valid to 2025-12-13)	[3]
Introduction to Data Engineering on Azure	AI / Cloud Computing	Microsoft	Not in source	Cloud infrastructure, Azure Synapse, Data warehousing, Microsoft Fabric	Verified Credential	[3]
Power Quality Analysis	Technical	Eaton Power	Not in source	Low Voltage Switchgear, Arc Flash Analysis, Stakeholder Communication	Specialized learning / Skill Assessment Expert	[2]

GitHub Administration	Technical / DevOps	Microsoft / GitHub	Not in source	Repos, branches, commits, roles and access control	Completed / Badge Issued	[1]
Google Classroom Fundamentals	Education Technology	Google	Not in source	LMS management, digital pedagogy	Certificate of Completion (Oct 26, 2023)	[7]
Schneider Home Certification	Industrial Certification	Schneider Electric	Not in source	Inverter, Boost, Pulse Backup Controller, Commissioning with Smart Panel Setup App	In Progress (Pending Certification Test)	[1]
Labour Law Training	Legal / Compliance	SASSETA / CCMA	Not in source	Dispute resolution, Labour Relations Act (LRA), CCMA procedures	Final Cost: R800	[3]
Engineering trade application theory practical (Project-29)	Technical Project	Tshingombe Engineering	Not in source	Engineering, trade theory and practical application	Modified 24/08/2025	[1]
Framework implementation system logic control (Project-12)	Technical Project	Tshingombe Engineering	Not in source	Framework design, control systems, logic control	Modified 17/01/2024	[1]
Introduction to GitHub's products	Technical	Microsoft Learn	Not in source	Marketplace, integrations	84% Complete	[1]
Choose and deploy models from the model catalog in Azure AI Foundry	AI	Microsoft Learn	Not in source	Model selection, deployment	32% Complete	[1]

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Based on 20 sources

Qualification Title	NQF Level	Institution or Company	Technical Subjects and Modules	Regulatory Body or SETA	Industry Sector	Operational Task Description	Assessment Criteria (Inferred)	Source
National Certificate N1: Electrical Engineering	2	St Peace College	Mathematics, Industrial Electronics, Engineering Science, Electrical Trade Theory	DHET, SAQA, QCTO, Umalusi	Energy, Manufacturing, Construction	Foundational competency in Electrical Engineering; application of science, mathematics, and drawing skills to engineering trades.	Assessment based on trimester marks (30% Test 1 + 70% Test 2) and final examination (min 40% trimester mark to qualify).	[1], [2], [3], [4]
National Certificate N2: Electrical Engineering	3	St Peace College	Mathematics, Industrial Electronics, Engineering Science, Electrical Trade Theory	DHET, SAQA, QCTO, Umalusi	Energy, Manufacturing, Construction	Advanced theoretical knowledge for electrical apprenticeship; building on N1 skills to work with electrical circuits.	Mastery of alternating current theory, conductors, insulators, cables, and basic electrical reticulation; ability to perform calculations for induced emf.	[1], [2]
National Certificate N3: Electrical Engineeri	4	St Peace College / Shalom Technic	Mathematics, Industrial Electronics,	DHET, SAQA, QCTO, Umalusi	Energy, Manufacturing, Construction	Preparation for career as an artisan; focus on	Verification of technical competency in industrial orientation,	[1], [5], [2]

ng		al College	Engineering Science, Electrical Trade Theory or Electro-technology			industry practices, administrative procedures, and produce electrical working drawings.	plant operations, and administrative procedures for artisan qualification.	
National Certificate N4-N6: Electrical Engineering	5-6	St Peace College / Oxbridge Academy / TVET Colleges	Mathematics, Industrial Electronics, Engineering Science, Electrotechnics	DHET, SAQA, QCTO, Umalusi	Energy, Manufacturing, Mining	Post-matric qualification leading to National Diploma; focus on advanced electrotechnics and preparation for roles like Assistant Foreman or Electrical Designer.	Evaluation through ICASS (Integrated Continuous Assessment) and ISAT (Integrated Summative Assessment Task); minimum trimester mark of 40% in class tests.	[1], [2], [3]
National N Diploma: Electrical Engineering	6	St Peace College / Shalom Technical College / Afric Training / DHET	Mathematics, Industrial Electronics, Engineering Science, Electrotechnics, Power Systems, Control Systems, Power Machines, Plant Operation	DHET, SAQA, QCTO, ECSA, MERSETA	Energy, Manufacturing, Infrastructure	Design and wire control circuits for AC/DC machines; fault finding on control panels; requires 18-24 months relevant workplace	Completion of N1-N6 certificates plus verified 24 months practical experience; weighted scoring of ICASS (40%) and External Summative Assessment (60%).	[5], [3], [6], [7], [8], [4]

						experience.		
Occupational Certificate: Electrician	4	City Power / Eskom / St Peace College / Sci-Bono Discovery Centre	Power Plant Maintenance, Substation Operations, Panel Wiring, Metering Systems, Safety Regulations (SANS 10142), AC/DC Circuits	QCTO, NAMB, EWSETA, MERSETA, CHIETA	Energy, Utilities, Municipal Services	Daily maintenance, repair and installation of electrical systems; perform network operating; inspection of high/low voltage systems.	Competency based on trade test results and successful completion of Electrical Trade Test; adherence to SANS 10142 standards.	[5], [2], [3], [6], [9, 10], [11], [12], [4]
Electrical Trade Test Certificate	Occupational	City Power / Indlela (NAMB)	Panel Wiring, Three-phase maintenance, Fault finding, SANS 10142 compliance	NAMB, SETA (Merseta/ Sasseta)	Energy, Distribution	Maintenance and repair of electrical systems; network operating at all voltage levels; equipment malfunction diagnosis.	Practical ability to wire a meter box/switchboard and score at least 80% on theory and practical benchmarks.	[3]
National Diploma in Electrical Engineering	6	DHET / SAQA accredited institutions / UNISA	Heavy/Light Current, Digital Electronics, Process Control, Electrotechnology, Calculus	ECSA, SAQA, QCTO	Energy, Mining, Aerospace	Professional engineering work; design and building of electrical equipment; diagnosing and	360 credits total; completion of N1-N6 certificates plus 24 months industrial experience; competency in circuit analysis.	[1], [11]

						fixing electrical faults.		
Master of Science / Engineering in Electrical Engineering	9	Atlantic International University (AIU)	Advanced Electromagnetic Theory, DSP, Control Systems Design, VLSI Design, Power Systems Stability, Quantum Mechanics	SAQA, ECSA (Aligned)	Research, Higher Education	Conducting thesis research; developing AI-driven optimization for hybrid renewable microgrids; designing complex electrical systems.	Successful defense of a 7,500-word master's thesis and achievement of 50% or higher in advanced research projects; 360 credits total.	[5], [8, 13], [9, 10], [14]
National Certificate (Vocational) (NCV)	2-4	St Peace College / DHET	Electrotechnology, Industrial Orientation, Practical skills training	UMALUSI, QCTO, SETA	Mining, Manufacturing, Energy	Installation of wiring premises; repair of electric motors; maintenance of control panels and circuits.	Portfolio of Evidence (PoE); Integrated Continuous Assessment System (ICASS) including term tests and assignments.	[9, 10]
Installation Electrician	4	Department of Labour (DOL)	Three-phase systems (380 Volts), SANS 10142-1 Wiring Code	DOL, EWSETA	Electrical Contracting	Testing and installation of three-phase electrical systems in residential and industrial settings.	Possession of N1-N4 qualifications and successful completion of the relevant trade test for Wireman's License.	[3]

Master Electrician	5	Department of Labour (DOL)	Advanced Voltage systems, specialized environmental electrical work	DOL	Heavy Industry, Mining, Energy	High voltage work, safety management in hazardous environments, specialized industrial installations.	Certification to work in specialized areas and complex infrastructure projects beyond standard single/three-phase.	[3]
National Certificate in Electrical Engineering (Mechatronics)	3	St Peace College / Afric Institute	Air conditioning, Refrigeration, Ventilation, Fitter welding, Control instrument, HVAC	Merseta, CHIETA	Manufacturing, Mining	Maintenance of heavy current systems, refrigeration pipes, and welding of components.	Compliance with SABS 0142 and ability to identify cable ratings and termination methods correctly.	[2]
National Certificate: Electrical Engineering (Mining/Utilities)	3	Madinda Utilities / Municipalities	Install and commission DC and AC machines; install, test and maintain electrical equipment in hazardous locations	SAQA, SABS	Utilities, Energy, Mining	Rollout of DLMS/COSEM-compliant Advanced Metering Infrastructure (AMI); smart meter installation.	Competency in unit standards including oral/signed communication and inspection of explosion prevention apparatus.	[7, 15, 16], [8]
Occupational Certificate: Advanced Manufacturing	6	Alison / Schneider Electric	Robotic Process Automation (RPA), Mechatronics, PLC Logic	Sasseta, Merseta	Automotive, Industrial Automation	Developing control logic for automated assembly lines;	Modular certification based on quiz scores and practical implementation tasks	[9, 10, 17]

(Robotics)			Simulation, Digital Control Systems			automating repetitive tasks in electrical design.	logged via digital portfolios.	
SQA Advanced Diploma in Electrical Engineering	SCQF Level 8	SQA (Scottish Qualifications Authority)	Industrial Plant Maintenance, Synchronous Machines, Switchgear and Protection, Engineering Software	SQA	Energy, Manufacturing, Sustainable Technologies	Maintenance of industrial plants and design of computer-aided electrical installations.	Mastery of advanced mathematical modeling (integrals/derivatives) and proficiency in specialized engineering software.	[11]
Electrician 4th Semester - Trade Practical	NSQF Level 5	NIMI, Chennai	Electronic Practice, Control Panel Wiring, AC/DC Motor Drives, Power Generation	Directorate General of Training	Electrical Sector	Construction of rectifiers, speed control of motors using thyristors, and maintenance of circuit breakers.	Ability to calculate resistance via color codes and wire control panels for induction motors.	[12]
Radio Technical Maintenance (SAPS Unit)	3, 4 or 6	SAPS / Technology Management Services	Radio Installation, Frequency Modulation Principles, Basic Electronics	SASSETA, SAPS	Telecommunications, Law Enforcement	Repairs, installation, and preventative maintenance of radio equipment at Radio High Sites.	Vetting process including security screening and ability to use communication monitors/oscilloscopes.	[3]
National Certificate	3	SAPS / PSIRA	Criminal Law,	SASSETA, PSIRA	Public Safety and	Patrol duties,	Summative assessment of	[5]

: Policing / Security			Community Policing, Traffic Management, Forensic Science		Security	crime scene management, firearm handling, and incident reporting.	law enforcement proficiency, psychometric profile fit, and absence of a criminal record.	
Occupational Certificate: Security Management / GENIE	5-7	PSIRA	Electronic security systems installation, biometrics, intrusion detection, CCTV monitoring.	PSIRA, SASSETA	Security, Law Enforcement	Installation of electronic security systems and maintenance of automated police management information systems.	Compliance with PSIRA Grade A-E standards, OHS Act safety codes, and investigation protocols.	[8]
Schneider Home Certification	Not in source	Schneider Electric	Installing/ wiring Inverters, Boost, and Pulse Backup Controllers; Energy Monitor installation	NABCEP	Residential Energy Management	Install and commission Schneider Home suite of products; troubleshooting and RMA instructions.	Minimum 80% passing score on a 25-point Certification Test.	[6]
Bachelors in Engineering (Electrical)	7 (Inferred)	Atlantic International University (AIU)	Calculus, Physics, Power Systems, Robotics and Automation, Internet of Things	Engineering Accreditation Commission (Inferred)	Research and Advanced Engineering	Design and development of electrical systems; research projects in	Completion of 5,000-word bachelor thesis and mastery of core engineering specialized principles.	[18]

			(IoT)			sustainable energy.		
Brevet de Technicien Supérieur (BTS) Électrotechnique	5	French Higher Education	Preliminary study and design of an installation, Maintenance, Project management	RNCP	Manufacturing, Energy	Detailed project design, commissioning, and performing performance diagnostics on smart installations.	Validation of specific competency blocks ('blocs de compétences') through practical professional activities.	[7, 15, 16]
National N Diploma: Mechanical Engineering	6	TVET Colleges / DHET	Engineering Drawing, Mechanotechnics, Fluid Mechanics, Strength of Materials	SAQA, QCTO, MERSETA	Mining, Manufacturing, Automotive	Design, manufacturing, installation, testing, and faultfinding; Lathe, milling, and grinding operations.	Performance in practical machining tasks and accuracy in numerical calculations for torque/stress analysis.	[6]
National Certificate: Autotronics	Not in source	Not in source	Trade Theory, Mathematics, Science, Engineering Drawing	merSETA	Manufacturing, Automotive	Interpret and produce electrical drawings; fabrication of trade-applicable projects.	Successful completion of theoretical categories A-C and practical trade-related skill applications.	[5]
National Certificate: Ammunition Fitting	Not in source	Not in source	Chemical Engineering, Instrument Mechanician	CHIETA	Chemical Industries	Specialized maintenance and fitting within	Alignment with sector-specific skills development acts and workplace	[7]

						chemical and hazardous manufacturing environments.	learning standards.	
Cybersecurity & Data Protection Certification	Not in source	Microsoft / ISC2	Azure OpenAI, Network Security, Microsoft Defender, CISSP-ISSMP domains	ISC2, UK Cybersecurity Standards	ICT & Security	Implementing security policies; threat and vulnerability analysis; configuring cloud security.	Achieving passing scores in randomized quiz banks and verifying credentials via BlockMark Registry.	[4]
Energy Management Compliance	Not in source	Schneider Electric	Smart Panel technology, Power quality, Compact NSX, MCCBs	Not in source	Energy & Power Systems	Installation and monitoring of smart panels and motor management controllers (TeSys T).	Verification of technical installation against manufacturer specifications and international standards (IEC).	[4]

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Based on 20 sources

Qualification Title	Institution/Company Name	NQF Level/ Code	Core Modules and Technical Skills	Project Objectives and Tasks	Assessment Criteria and Results	Budget and Financial Data (Inferred)	Regulatory Compliance and Standards	Source
National N Diploma in Electrical Engineering	St Peace College / DHET / SAQA / City Power / Eskom	NQF Level 6	Electrotechnology, Power Systems, Industrial Electronics, Mathematics (N1-N6), Engineering Science, Power Machines, Control Logic, Transformer Components.	Transformer rewinding, panel wiring, installation of circuits up to 1000V AC, motor assembly, cable fault testing, and maintenance of electrical systems.	ICASS weighting: 30% (Test 1), 70% (Test 2); 40% minimum pass per subject; Portfolio of Evidence (PoE) requires 2,670 hours of work experience.	Training budget estimated up to R40 million; tuition fees approx. R11,000 per N-level; salary range R353,979 per annum.	SANS 10142-1, IEC 61508, OHS Act 85 of 1993, QCTO/SAQA policies, DHET National Conduct Policy.	[1-9]
Master of Engineering Systems / Electrical Engineering	Atlantic International University (AIU) / St Peace College	NQF Level 9	Advanced Electromagnetic Theory, Digital Signal Processing, Control Systems Design, Power Systems Engineering, Renewable Energy Systems, Quantum	Master's Thesis: Framework for Vocational Education; supply of electricity to rural residents; designing smart	Final Thesis defense; Research paper publication; 50% minimum total credit achievement; 100% grade in Advanced Electromagnetic Theory.	Application Fee: 150 USD; Research funding request for rural projects approx. R40,000,000; Minimum	IEEE, ANSI, ISO 37301 (Compliance Management), SAQA evaluation of foreign qualifications.	[2, 5, 10, 11]

			Mechanics.	grid technology and LMS implementation.		project budget R40,000.		
Electrician (Artisan / Shift Worker)	City Power Johannesburg / Eskom	N2 / NQF 4 / Task Grade 9	Electrical distribution, network operating (LV/MV), maintenance of transformers/switchgear, fault finding, and safety protocols.	Installation of Lutz Substation cables, construction of 88kV supply, daily maintenance, and response to emergency call outs.	Trade test certification required; evaluation based on technical functionality threshold of 80%; valid Driver's License/Permit.	Salary R350,966 per annum; subcontractor rates for 3-phase DB installation at R9,500.	SANS 10142-1, IEC 60840, OHS Act, SHERQ Regulations, Department of Labour (DOL) registration.	[1-3, 12]
National Certificate: Electrical Engineering	SAQA / DHET / St Peace College	NQF Level 2 to 4	DC and AC machines, control gear, Industrial Electronics, Engineering Science, Mathematics, inspection of explosion prevention apparatus.	Install, test, and maintain electrical equipment in hazardous locations; commission machines; troubleshoot battery chargers and inverters.	133 Credits total requirement; ICASS formative/summative evaluations; Portfolio of Evidence (PoE).	Training budget for N-level students estimated at R2,500; project budget of R300 inferred for kit components.	SAQA ID 72071, SANS 10142-1, DHET guidelines, OHS Act 85 of 1993.	[3-5, 8, 9, 11-15]
National Trade Portfolio / Artisan Status	QCTO / City Power / Eskom	NQF Level 6	Trade Theory, Practical Wiring, Fault Finding, Panel Assembly, Motor Drive Commissionin	Site inspections at utilities; transformer protection	Portfolio of Evidence (PoE) including wiring diagrams and fault	R2,370.00 inferred final cost for smart meter installati	QCTO policy alignment, SABS, NRS 049-	[5]

			g.	analysis; maintenance of electrical distribution systems.	logs; 24 months relevant work experience.	on training after adjustments.	2:2024.	
Advanced Certificate in Electrical Engineering	SQA (Scottish Qualifications Authority)	SCQF Level 7 / GP6D 47	Electrical Principles, Three Phase Induction Motors, Power Electronics, PLCs, Inspection and Testing of Low Voltage Installations.	Construct and demonstrate transducer-based systems; Design and verify software solutions using high-level languages.	Closed-book written paper (2 hours) and laboratory assignment (2 hours) with detailed written report; Graded Units.	Training budgets allocated based on SCQF credit point values (96 total credit points).	National Occupational Standards (NOS); UK Renewable Energy Sector standards.	[6]
Electrician 4th Semester - Trade Practical	NIMI (National Instructional Media Institute)	NSQF Level 5	Electronic Practice, Control Panel Wiring, AC/DC Motor Drives, Inverter and UPS, Power Generation, Transmission and Distribution.	Determine resistance values by color code; Construct rectifiers; Speed control of DC motors; Erect overhead service line poles.	Formative and summative assessments through intermediate test questions and final project evaluation (OK or not OK).	Inferred from standard vocational training unit costs per trainee; includes raw material and equipment usage costs.	Bureau of Indian Standards (BIS) specifications; NSQF curriculum standards.	[15]
Panel Wiring and Control / Electrica	St Peace College / City Power / Sci-Bono	NQF Level 2 to 4	Cabling, jointing, busbar safety, DB building, panel layout, crimping,	Design and build electrical equipment; demonstr	Trade Test technical environment; practical assessment rubrics;	Basic DB 3-phase install price R9,500;	SANS 10142, SABS 0142, ISO 9001,	[9, 12]

l Wiring Kit			soldering, electrical safety protocols.	ating proficiency in wiring premises and installing low-voltage distribution boards.	ICASS/ISAT methodologies.	Wiring kit final cost R300 (Sale Price R450, Amendment - R150).	SAQA ID: 263006.	
EcoStruxure Expert / Smart Panel	Schneider Electric	Mapped to NQF Level 5	Industrial Automation, PowerLogic P5 Protection, Wind Energy, TeSys T motor management, ION8650 metering.	PLC configuration; Energy modeling and verification; Managing complex industrial automation and energy monitoring.	14.15 hours aggregate training; pass mark validated through digital badge system; real-time data analysis via Azure/GitHub.	R0.00 (Company sponsored training/ grant); Smart Panel final cost R10,000 (Amendment - R2,000).	IEC 61499, IEC 61508, IEEE 1459, MIL-STD specifications.	[4, 9, 16]
Diploma in Electrical Studies / Technology	Alison Learning (CPD)	Beginner to Advanced	Electrical Wiring Systems, Device Boxes, Circuit Analysis, Mesh and Nodal Analysis, Robotics, Solar Energy Engineering.	Master basics of residential wiring; identify hazards; analyze circuit parameters and unknown resistance.	Multiple assessments; Final Course Assessment requires 80% or more to pass (40% - 50% mentioned in logbooks).	Free online tuition; optional fee for physical certificate issuance; inferred from commercial model.	CPD UK Accreditation; ISO 37301:2021 (Compliance Management).	[6, 8, 9]
Professional Security Certifica	PSIRA / SASSETA	Grade A, B, C	Security Management, Intelligence Infrastructure,	Regulation and control of security	30 to 90 days standard investigation	R800.00 inferred cost for Labour	PSIRA Act 56 of 2001, POPIA,	[5]

tion			Installation of Electronic Security Systems, CCTV Monitoring.	occupation; automated data storage for crime records; investigative techniques.	period; 70% Practical / 30% Theory assessment split.	Law Training Module after UIF credit application.	LRA, SASSETA unit standards.	
Rural Electrification Project	NSF / City Power	Inferred NQF 5/6	PV-based hybrid systems, smart metering, mini-hydro, battery storage.	Supply electricity to rural households in Africa using 50-watt Solar Home Systems.	Evaluation based on grid stability and load balancing efficiency.	Project budget not to exceed R550,000.00 (VAT inclusive).	SANS compliance; Department of Energy Integrated Energy Plan.	[9]
Transformer Rewinding Experiment	St Peace College / Cleveland State University	Not in source	Core dismantling, wire thickness calculation, magnetic flux, no-load characteristics, voltage regulation.	Rewinding of core to prevent buzzing; 140-step disassembly; measuring magnetic field B as a function of current I.	Test results recorded/certified; leakage current tabulated; written reports; video-taped bench exams.	Cost per unit for repair estimated R100,000; Research grant funding (RS-2022-0014288 3) noted.	SABS IEC 60335-2-76, SANS 10142, IEC Standards.	[3, 12]

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Based on 11 sources

Recipient Name	Qualification Title	Issuing Institution	SAQA ID	NQF Level	Field of Study	Certificate Number	Status	Source
Tshingombe Tshitadi	National N Diploma: Engineering Studies	Department of Higher Education and Training (DHET)	111285 (Historical ID: 90674)	Level 6	Electrical Engineering / Mechanical Engineering	Submission No: Pending	Pending / Submitted	[1, 2]
Tshingombe Tshitadi	National Certificate: N6 Engineering Studies	Department of Higher Education and Training (DHET)	Not in source	Not in source	Electrical Engineering	Not in source	Achieved	[2]
Tshingombe Tshitadi	National Certificate: N5 Engineering Studies	Department of Higher Education and Training (DHET)	Not in source	Not in source	Electrical Engineering	Not in source	Achieved	[2]
Tshingombe Tshitadi	National Certificate: N4 Engineering Studies	Department of Higher Education and Training (DHET)	Not in source	Not in source	Electrical Engineering	Not in source	Achieved	[2]
Tshingombe Tshitadi	National Certificate: N3 Engineering Studies	Department of Higher Education and	Not in source	Not in source	Electrical Engineering	Not in source	Achieved	[2]

		Training (DHET)						
Tshingombe Tshitadi	National Certificate: N2 Engineering Studies	Department of Higher Education and Training (DHET)	Not in source	Not in source	Electrical Engineering	Not in source	Achieved	[2]
Tshingombe Tshitadi	National Certificate: N1 Engineering Studies	St Peace College / Department of Higher Education and Training (DHET)	63375	Level 2	Engineering Studies (Electrical)	Entrance ID: 67491 / Learner ID: 2004007064381	Achieved	[1, 2]
Tshingombe Tshitadi	Assessor and Moderator Certificate	St Peace College / SASSETA / PSIRA	Accreditation No: 111999691949	Level 4	Electrical Engineering / Security Management / Moderation	TIRCG00091061010	Achieved	[2-4]
Tshingombe Tshitadi	Certificate: Career Development	South African Council for Educators / St Peace College	Not in source	Not in source	Career Development	TIRCG00091061010	Registered	[5, 6]
Tshingombe Tshitadi	DHET-SAQA Discovery Award Prize for Career Novation	DHET / SAQA	Not in source	Not in source	Career Development	Not in source	Achieved	[1]
Tshingombe Tshitadi	Diploma in Outcome-based Education	Alison	Not in source	Not in source	Education and Pedagogy	Not in source	Achieved	[1, 2]

	and Academic Quality Assurance							
Tshingombe Tshitadi	Diploma in Applied Psychology - Consumer Behavior	Alison	Not in source	Not in source	Applied Psychology	Not in source	Achieved	[1]
Tshingombe Tshitadi	Advanced Diploma in High School Chemistry	Alison	Not in source	Not in source	Chemistry / STEM	Not in source	Achieved	[1]
Tshingombe Tshitadi	Diploma in Safety Engineering	Alison	Not in source	Not in source	Safety Engineering	Not in source	Achieved	[2]
Tshingombe Tshitadi	Diploma in Machine Learning with Python	Alison	Not in source	Not in source	Information Technology	Not in source	Achieved	[2]
Tshingombe Tshitadi	Advanced Certificate in Advanced Phase Teaching	Not in source	67q0	Not in source	Teaching / Education	Not in source	Not in source	[1]

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Instance Category	Title/Description	Sector/Entity	Standards/Qualification Level	Key Outcomes/Deliverables	Evaluation/Metric	Reference/ID	Source
Qualification	National N Diploma:	DHET / SAQA / QCTO /	NQF Level 6	Completion of N4–N6 theoretical	360 Minimum Credits; 40% pass mark for	SAQA ID: 90674 / Student ID:	[1], [2], [3],

	Electrical Engineering	St Peace College		modules and 18 months of practical workplace experience in generation, transmission, and installation.	examinations; 92% Final Grade (Fiston).	2100002023812	[4], [5], [6], [7], [8]
Institutional Research	Curriculum Integration and Career Mapping for Engineering Education in Africa	Atlantic International University (AIU)	Doctoral / PhD Thesis	Blueprint for educational transformation; mapping WA-coded tasks to LMS modules and national trade curriculum integration for rural colleges.	Curriculum audit metrics; peer-reviewed research outputs; 7,500 word requirement.	AIU Online Library; MBM302	[1], [9, 10], [7], [11]
Regulatory Compliance	NBCPSS Levy Compliance Order	Private Security Sector / NBCPSS	Labour Relations Act 66 of 1995, Section 33A(13)(a)	Resolution of levy non-compliance, outstanding contributions, interest, and fines.	R74,200 levy + R12,963 interest + R20,000 fine = R107,163.71 total.	Case: LEVOCAS/000168/GO; Levy No: LV5090	[1], [12], [7], [13], [14, 15]
Technical Specification	Workplace Assessment (WA) Codes for Instrumentation and Digital Systems	ECSA / DHET / QCTO	NATED N1–N6 Alignment; NQF Level 6	Diagnostics, calibration, fault finding, and maintenance of control systems and sensors.	Conformance to SOP; zero/span/range checks; RMS power calculations.	WA19 to WE28	[2], [3], [4], [5], [7], [11]
Patent	Engineering Master Doctoral – Rural Implementation Framework	CSIR – Defence and Security / SAQA	National Qualification and Trade Examination Curriculum	Integration of NATED and NCV systems for rural colleges to address qualification irregularities	Experimental logs; conductivity testing; derivative modeling; 3D engineering studies.	Patent No: 520520	[1], [16], [17], [18]

				and stabilize power systems.			
Application Framework	Career Discovery Application and Experimental Framework for Career Development	Engineering, Compliance, and Educational Innovation / Alison	SAQA/NQF Standards; WA Engineering Technologist benchmarks	Modular framework for transdisciplinary career development; digital credentialing; workplace simulation logic.	100% fault detection accuracy; Diagnostic Score: 92% (Career Mapping); rubric-based scoring.	Learner ID: 67043; Alison ID: 37876299	[1], [4], [5], [16], [17], [18, 19]
Technical Specification	Integral Calculus Applied to Electrical Trade Theory	Engineering Education	N4–N6 Engineering Mathematics	Calculation of Energy, RMS Power, Ampacity, and Average Load Balancing from voltage/current functions.	PRMS =T1 ∫i(t)2dt ; Total energy in Joules; thermal load dissipation.	WA2704, WA2707, WA2709, WA2710	[2], [4], [5]
Case Study	Web-Based Crime Management System for Samara City	Samara City Police Station / Qeios	Preprint Research Article	Online crime reporting and computerized management of records to replace manual paper-based files.	Preprint score 2.79; 29 peer reviewers; 4,047 views.	DOI: 10.32388/JGU5FH	[20], [21]
Vocational Training	Electrician Trade Theory and Practical – NSQF Level 5	National Instructional Media Institute (NIMI)	NSQF Level 5; NCO Code 7411.0100	Installation, repair, and maintenance of electrical systems, motor drives, and control panels.	525 hours duration; Semester-based AITT exam; Pass score 80%.	NIMI Electrician Trade Practical	[20], [12], [22]
Legal / Compliance Case	Labour Appeal and Rescissio	CCMA / Labour Court of South	LRA Section 144 / Rule 7A	Review of rescission ruling regarding	Procedural compliance check; lack of prima facie	Case Numbers: JA 37/19, JR 2461/15,	[1], [12], [9],

	n Ruling: GAJB6808-15	Africa		dismissed union applicants; enforcement of arbitration awards.	defense; Filing Costs: R700.	GAJB6808-15	[7], [14]
Compliance Framework	SANS 10142 Low-voltage Installation Safety	SABS / City Power / Eskom	National Standard (SANS 10142-1)	Verification of voltage drop limits and mandatory protective conductors.	11.5V drop limit for 230V; 20V drop for 400V; max 5% drop.	SANS 10142 / VC 8036	[20], [3], [7], [14]
Course	ISO 37301:2021 – Principles of Compliance Management Systems	Alison / Regulatory Compliance	Intermediate	Implementation, monitoring, and auditing of compliance frameworks based on the PDCA cycle.	1.5–3 hours duration; Plan-Do-Check-Act cycle audit.	ISO 37301:2021	[1], [2], [3], [4], [5]
Compliance Document	GDPR Awareness and Compliance	European Union / Regulatory	General Data Protection Regulation (GDPR)	Personal data security, ICT security measures (Article 32), and retention policies.	€20 million or 4% global turnover fine for non-compliance.	GDPR Articles 4, 5, 9, 32	[3], [4], [5], [17]
Technical Specification	Eskom Substation Automation Standard	Eskom Holdings SOC Ltd	Transmission Substation Standards	High-availability substation automation and network architecture design.	Revision 3.	Unique Identifier: 240-61268959	[23], [10]
Technical Specification	Electric Fence System – Energizer Overview	Private Security / JVA / SABS	SABS IEC 60335-2-76	Perimeter defense via high voltage pulses and earth loop monitoring.	Output: 9kV; Energy: 4.0 Joules; 13V DC consumption.	JVA Z14/Z18	[7], [13], [14, 15]
Vocational	NATED N1–N6	DHET / St Peace	NQF Levels 2–6	Mastery of trade theory,	ICASS/ISAT mark sheets;	Programme Code	[1], [21]

Training	Engineering Electrical Studies	College		practical workshop logs, and National N Diploma requirements.	Pass score: 80% (Apprenticeship) or 40% (Exam).	5090840	, [24], [9], [7], [25], [11], [26], [27]
Institutional Process	Foreign Qualification Evaluation	SAQA	NQF Act 67 of 2008	Recognition and ratification of foreign school-leaving and higher education qualifications.	90 working days maximum turnaround time.	Tracking ID: 24031100600 03192	[12], [2], [24], [22]
Course	AI Foundations and Fluency Program	Sci-Bono ICT Academy / Microsoft	Professional Certifications	Essential AI skills covering Turing Test, ethics, Generative AI, and Responsible AI.	44 videos; 5-hour duration; 6 certifications.	Module 1	[12], [24]
Technical Specification	Logic Gate Testing (AND Gate IC 7408)	Engineering Electrical Manufacture	Technical Standard	Verification of logic gate truth tables via IC 7408.	Output Y LED Status (ON/OFF) against 5V/0V inputs.	Ref. 00100839	[17], [18]
Course	Engineering Electrical Master: Electrostatic and Electromagnetic Systems	AIU / St Peace College	Master's Level (NQF 9 Inferred)	Competencies in power system stability, creative system design, and electrokinematic modeling.	Experimental logs; integral and derivative-based system evaluations.	Section 12.3.2	[7], [11]

Case Study	Wilmington Oil Field Subsidence	Petroleum Engineering	Advanced Technical	Analysis of 29-foot subsidence and water injection mitigation strategies.	Injection ratio: 1.05 barrels per barrel produced.	Not in source	[2], [3]
Course	Diploma in Audio System Engineering	Alison / NPTEL	Advanced CPD Accredited	Analysis of oscillation, acoustic wave equations, and room acoustics.	10–15 hours duration.	Not in source	[2], [3]
Technical Specification	APC Matrix-UPS Installation and Diagnostics	Schneider Electric / APC	UL 1778, CSA C22.2, TUV EN 60950	Zero-break transfer time and power quality monitoring.	Transfer time 1 ms to bypass; 540–3700 BTU/hr thermal dissipation.	Matrix-UPS 3000/5000	[23]
Technical Specification	MTLx541A/AS and MTLx544A/AS Safety Isolators	MTL / Functional Safety	SIL 2 / IEC 61508	Hazardous area signal isolation for 4–20mA transmitters.	Failure rate 3–14 FIT; HFT: 0.	MTL4541A/5541A	[10]
Institutional Research	Homicide Risk Evaluation and Firearm Safety	Mental Health / Forensic Psychology	Advanced Certificate / CPD	Structured Professional Judgment tools (HCR-20, VRAG, SAVRY).	25x more likely to die by gun homicide.	Not in source	[3]
Qualification	National Diploma in Policing	Afric Policing Institute / SASSETA	NQF Level 6	Criminal Investigation, Communication, and Information Management.	70% practical, 30% theory weighting.	SASSETA ID: 61729	[3]
Technical Specification	Modicon M580 Redundant Architecture	Industrial Automation / Schneider Electric	High System Availability	Seamless failover and high availability in process industries.	Hot-standby CPU synchronization.	M580 / M660	[21]
Cyberse	Cyber	IT	UK	Verified	Status: Active;	CE-PLUS-	[21]

curity Certification	Essentials Plus	Security / IASME Consortium Ltd	Government Standard	technical controls to protect against cyber threats.	Valid for 1 Year.	2025-001	
Course	Masters in Cryptocurrency and Blockchain Applications	AIU / Academic Institution	Masters Level	Deep dive into blockchain architecture, smart contracts, and decentralized finance (DeFi).	Not in source	Topic 4.1.12.15.17.1	[20], [12]
Technical Specification	TeSys™ T LTMR Motor Management Controller	Schneider Electric	IEC 61508 SIL 2	Monitoring, protection, and control of motors.	Galvanic isolation ≥4 kVac @ 50 Hz.	TeSys™ T	[23]
Grant Application	Foundational Biodiversity Information Programme (FBIP)	NRF / SAQA	Doctoral Research	Integrating biodiversity data into technical education curriculum.	Call Reference: FBIC250410310077	FBIC250410310077	[16], [17]
Legal / Compliance Document	Protection of Personal Information Act (POPIA) Course	Legal/Regulatory	Act No. 4 of 2013	General conditions for lawful processing of personal information.	Solving scenario-based practical training.	POPI Act 2013	[22]
Technical Specification	DL DM91 – Ignition System Training Panel	Vocational Training / De Lorenzo	NSQF Level 5 (Inferred)	Theoretical instruction and maintenance training in vehicle ignition systems.	Dimensions: 1900 × 2400 × 700 mm; Weight: ~200 kg.	DL DM91	[12]
Educational	Industry 4.0 &	Smart Factory /	4IR / SAQA mapped	Simulate cyber-	Power Factor (PF=cos(θ));	Not in source	[18, 19]

Framework	Smart Factory Systems	AI		physical production systems and predictive maintenance.	Energy ($E=\int P(t)dt$).		
Legal / Complaint Document	Pension Funds Adjudicator Complaint	Private Security Sector Provident Fund	Pension Funds Act 24 of 1956	Complaint regarding fund administration closure.	Jurisdictional limits review.	GP/00096285/2023	[13]

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[25] N2 Electrical Trade Theory-1.pdf

[26] N1 Electrical Trade Theory-1.pdf
Based on 50 sources

Module Name	Domain	Technical Content	Application Area	Target Audience	Learning Outcome	Assessment Method	Standards Alignment	Source
Smart Grid Enhanced with Artificial Intelligence (DL SGWD-AI)	Electrical / IT	Smart meters, MODBUS RTU, RS485 industrial buses, SCADA-WEB platforms, predictive load management, real-time consumption tracking, fault isolation	Smart Grids / Industrial Automation	Automation Engineers / Power Engineering Students	Design intelligent distribution networks and implement AI algorithms for grid optimization; evaluate cybersecurity and data integrity	Challenge-Based Learning (CBL), real-time simulation, and data analytics	Industry 4.0 standards, IEEE, ISO, ECSA	[1-7]
Electrician Trade (NSQF Level 5)	Electrical	Electrical wire joints, soldering, crimping, insulation resistance (Megger testing), Ohm's Law, Kirchhoff's Law, AC/DC circuits, magnetic circuits, 3-phase systems	Industrial, Business, and Residential premises	ITI Trainees / Electrician Apprentices	Install, maintain, and repair electrical machinery; locate faults using Megger; test and inspect single-phase domestic installations	All India Trade Test (AITT), ICASS semester marks, MCQs, and OMR sheets	NSQF Level 5, NCVT /NAC	[2, 4, 5, 8-10]
Machine Learning	IT / AI	Supervised, Unsupervised, and Reinforcement Learning; Mathematical Foundations (Linear Algebra,	Email spam detection, Customer segmentation, Autonomous vehicles,	AI Fluency Program Students / Technical Learner	Understand how AI systems learn from data and improve over time independently; apply	Course Progress Tracking, Skill profiles, and Aptitude testing	Microsoft recognized certifications, ISETT SETA, NSQF	[1, 4, 7, 11, 12]

		Calculus, Statistics); Deep Learning (Neural Networks)	Image recognition	s	mathematical foundations to AI models		Level 5	
AI Foundations	IT / AI	What is AI, Knowledge vs Intelligence, Turing Test, Chinese Room Argument, Data as Fuel, Ethics	Everyday AI (Instagram, Netflix, Siri), Medical Diagnostics	Learners of all backgrounds (no technical experience required)	Gain essential AI skills and understand the ability of machines to learn from data and make predictions	Introduction to AI Quiz	Microsoft recognized certifications	[1, 4, 7, 11, 12]
AC Circuits (Module 6)	Electrical / Electronics	AC fundamentals (RMS, peak), resonance (RLC circuits), power factor improvement, 3-phase systems (Star/Delta), vector diagrams	Industrial Power Distribution	Electrician Trainees / TVET Students	Analyze AC fundamentals and phase relationships; measure power in balanced/unbalanced loads; manage power factor	All India Trade Test (AITT), practical skills testing, and vector diagram analysis	NSQF Level 5	[3-5, 8, 13]
Control Panel Wiring	Electrical	Layout design, DIN rail mounting, Star-delta starters, Forward/Reverse control, Sequential control, Interlocking logic	Industrial Automation / Motor Starters	Automation Engineers / ITI Trainees / Artisan Electricians	Design and wire control panels for local/remote and automated motor operations; troubleshoot complex motor systems	Practical tasks, Wiring Checklist, Insulation Resistance test (>1 MΩ), Portfolio validation	NSQF Level 5, ISO/IEC standards, NEC	[1, 2, 11, 14]

Basic Electrical Practice (Module 4)	Electrical	Ohm's Law, Kirchhoff's Laws, DC series/parallel circuits, Wheatstone bridge, effects of temperature on resistance	Industrial Automation / Circuit Analysis	Electrician Trainees / TVET Students	Verify circuit characteristics; analyze series/parallel circuits; detect and interpret open/short faults	All India Trade Test (AITT), ICASS, ISAT, MCQs	NSQF Level 5, SAQA	[1, 3, 5, 8, 13]
Wires, Joints, Soldering & Underground Cables (Module 3)	Electrical	Conductors, insulators, wire size (SWG), crimping, soldering, Western Union joints, underground (UG) cables	Electrical Infrastructure and Installation	Electrician Trainees / Trade Test Candidates	Prepare electrical wire joints; carry out soldering and crimping; measure insulation resistance of cables	All India Trade Test (AITT), Practical Book exercises, Trade Tests	NSQF Level 5, BIS/ISI, NEC 2011	[1, 4, 5, 8, 13]
Nanotechnology Module	Science & Technology	Manipulation of matter at atomic/molecular scale (1–100 nm), nano-sensors, nano-filters, nano-coatings	Mining, Energy (Solar Panels), and Medicine	STEM / TVET Students	Design, test, and apply nanoscale materials; conduct scientific investigation and problem solving	Group work, experiments, and posters (graded on creativity/clarity)	NRF, DST, SAASTA, ECSA, NQF Levels 5-10	[1, 4, 7, 12]
Cybersecurity (DL NGL-CYBER)	IT	OSI model analysis, Firewall configuration, Encryption, VPN, ARP spoofing simulation, Authentication	Network Security and Data Protection	IT Security Specialists / ICT Support Engineers	Understand vulnerabilities at each OSI layer; configure secure networks and routers; apply encryption protocols	Simulation exercises (e.g. Man-in-the-middle attack), Packet analysis	SCQF, SAQA, IEEE, ISO	[1-3, 8, 15]

Solution Laboratory for Power Engineering	Electrical	Generation, Transmission, and Distribution; SCADA systems; fault detection; power factor correction; renewable energy (solar/wind)	Power Engineering & Smart Grid Systems	Electrical Engineering Students / Technicians	Understand grid stability and load balancing; analyze energy flow and system losses; apply troubleshooting in simulated faults	Practical Tasks and Simulation	De Lorenzo, IEEE, Industry 4.0, ECSA	[2, 4, 5]
Semi-Automatic Electric Machines Laboratory with AI (DL OPENLAB-SA-AI)	Electrical / Mechanical	DC/Induction/ Synchronous machines, signal processing, neural networks, reinforcement learning, LabVIEW	Industrial Automation / Electric Machines	Technicians / Engineers	Analyze machine performance under varying loads; optimize motor control via AI; develop hybrid electromechanical systems	Hands-on training experiments and Algorigram logic	De Lorenzo, Industry 4.0, NSQF Level 5-7	[2, 5, 13]
Smart Factory Enhanced with AI (DL I4.0 FACTORY-AI)	IT / Industrial Automation	Cyber-physical systems, IoT, predictive maintenance, digital twins, modular assembly stations	Industry 4.0 / Manufacturing	Automation Engineers / Factory Managers	Design and manage smart production lines; use AI for process optimization and resource allocation	Simulated manufacturing environment and fault analytics	Industry 4.0 educational frameworks, IEEE, ISO, ECSA	[2, 5, 6, 13]
Electrical Engineering (N1–N6)	Electrical	AC/DC Machines, Transformers, Diodes, Transistors,	Industrial Automation / Power Engineering	Electrical Engineering Student	Design and analysis of electrical systems; application	ICASS, ISAT, Formative/ Summative Tests,	SAQA, NQF Levels 1-3, DHET	[4, 13]

		Kirchhoff's Laws, Circuit Design, Power Factor Correction		s / TVET	of physics and mathematics to engineering	Trade Tests	TVET 191	
Magnetism and Capacitors (Module 5)	Electrical / Electronics	Electromagnetism, self/mutually induced emfs, capacitor types, induction, analog signal processing	Electrical Components / Sensor Feedback Systems	Electrician Trainees / Trade Test Candidates	Verify characteristics of magnetic circuits and capacitors; analyze analog signals in speed sensors	All India Trade Test (AITT), VBA Logigramm validation	NSQF Level 5	[8, 13]
AC/DC Motor Drives	Electrical	VFD (Variable Frequency Drive), Thyristors, IGBT motor control, SCR speed regulation, VVVF	Industrial Load Management / Variable Speed Drives	Automation Technicians / ITI Trainees	Control motor speed and direction using electronic drives; construct and test universal motor speed controllers	Tachometer-based performance verification, Performance testing	NSQF Level 5, ISO	[1, 14]
Electrical Engineering Principles	Electrical	DC principles (Thevenin/Norton, Superposition), Single-phase AC (RLC), Three-phase, Electrostatics, Electromagnetics, Transients	Electrical Power and Drive Systems	Engineering Technicians / Apprentices	Demonstrate knowledge of DC/AC principles and electromagnetics; solve complex circuit problems	Portfolio-based assessment, assignments, and structured tests	SCQF Level 7, SQA	[16, 17]
Transmission Lines and	Electrical / IT	Primary/Secondary	Electrical Network	Advanced	Evaluate characteris	Two-hour supervised	SCQF Level	[16, 17]

Complex Waves		parameters (Z0 , propagation constant), matched terminations, phasor analysis, reflection coefficient	Response / Telecommunications	Higher Students / Engineering Candidates	tics and performance of transmission lines; solve network response problems with complex waves	closed-book assessment	8, SQA	
Big Data Module (DL NGL-DATA)	IT	Apache Spark, Python, SQL queries, supervised/unsupervised learning, MLlib, GraphX social network analysis	Data Science / Business Analytics	Data Scientists / IT Students	Build predictive models; perform anomaly detection and segmentation; analyze large structured and unstructured datasets	Programming exercises and practicals using Kaggle datasets	Not in source	[2, 8]
DL DM91 Ignition System Training Panel	Automotive / Mechanical	Hall effect, magnetic/optical triggers, distributorless ignition, Coil-On-Plug, signal detection	Vehicle Maintenance	Vocational Skill Schools / Technical Colleges	Understand ignition timing and spark delivery; analyze system behavior; practice fault diagnosis	Intelligent fault setting and real-time signal detection	Vocational skills standards	[3, 5, 8]
Railway Infrastructure Academy	Civil / Electrical	Track design, Overhead Electrification (OHTE), Signal Design, Parametric Optimization	Railway Infrastructure Maintenance	Railway Engineers / Technicians	Maintenance strategy and static load testing; capture deflection data and	Ultrasonic inspection, trolley inspection, and condition index formulas	Railway Maintenance Standards (TM2099),	[7, 12]

					assess geometry		SAICE	
Electronic Practice	Electrical / IT	Resistors, active/passive components, diodes, Rectifiers, Transistors, UJT, FET, logic gates, CRO operation	Industrial Automation / Power Supplies	ITI Trainees / Electrician Trade Students	Identify components; test active components; construct and assemble simple electronic circuits	Practical Book exercises, Portfolio-Based Assessment, Rubrics	NSQF Level 5	[11, 14]
Electrotechnics N4	Electrical	Principles of electricity (Kirchhoff's laws), Electromagnetism, Transformers (Turns ratio), AC Machines	Power System Design	TVET students seeking National Diploma	Analyze DC/AC circuits; calculate magnetic flux density and transformer efficiency	Internal Continuous Assessment (ICASS 40%) and final exam (60%)	NATED Report 191 (N4)	[11, 18]
Engineering Skills	Engineering	Mechanical, Electrical/Electronic, Fabrication, Manufacture and Assembly skills	Industrial Automation	Learners preparing for entry-level engineering employment	Acquire practical skills required in engineering workplaces; automatic certification of Critical Thinking	Portfolio, written tests, and Assessment Support Packs (ASPs)	SCQF level 4, UK National Occupational Standards (NOS)	[18, 19]
Advanced Higher Engineering Science	Mechanical / IT	Structural analysis, energy systems, microcontroller logic, Wien bridge oscillators,	Engineering Education / Industrial Automation	Advanced Higher Engineering Science Students	Analyse and design solutions for complex engineering problems across	External examination (75 marks)	SQA Advanced Higher, NQF / SAQA	[10, 16]

		project management (critical path)			mechanical and electronic disciplines			
Portfolio Development / Basework	IT / Education	Structuring learning artifacts, formatting for CPD, evidence integration, QR-coded logs	Credentialing / Career Development	Learners / Technical Professionals	Build digital portfolios using evidence-based artifacts; mastery of digital logbooks and dashboards	Submission logic, VBA templates, and dashboard tools	CPD Scotland, SAQA	[20-22]
Logic Development / Logigram Logic	IT / Programming	Workflow visualization, Decision trees, process maps, Algorigram translation	Workflow modeling / Automation	Automation Engineers / Students	Design and validate frameworks using logigram and inventory tools; translate logigrams into executable code (Python/VBA)	Diagnostic simulation and code execution	ISO, SAQA / NQF Level 5	[22-24]
DL NGL-IOT Internet of Things Module	IT / Electronics	MQTT Protocol, DevIoT Unit, STM32F103, Wi-Fi Network Analyzer, Packet Sniffer, Arduino	Industry, Home Automation, Telemedicine, Agriculture	Computer Science and Electrical Engineering students	Set up a complete distributed IoT system; understand sensors, actuators, and microprocessor control	Hands-on laboratory experiments and programming exercises	OSI model protocols	[3, 8]
Experimental Workplace	Electrical	Real-world diagnostics,	Workplace Readiness	Vocational	Execute complex	Rubric-based	WA Engine	[23, 24]

Integration		site visits, simulation labs		Learners / Advanced Apprentices	diagnostics and generate credential-ready artifacts aligned to SAQA/NQF	workplace task evaluation	ering Technologist bench marks	
Trade Engineering Foundations	Electrical / Mechanical	Panel wiring, fault analysis, motor control, and protection logic	Industrial Automation / Diagnostic Systems	Electrical Engineering Students / Tradespersons	Apply diagnostic logic to fault analysis and motor control	Diagnostic simulation (Python/VBA)	SAQA / NQF Level 4–6	[23, 24]
Credential Artifacts	Education / Administration	Rubrics, assessment briefs, and documentation	LMS Deployment / Institutional Management	Educators and Industry Partners	Generate credential-ready artifacts aligned to SAQA/NQF	Portfolio artifact submission and rubric-based evaluation	SAQA / NQF / WA standards	[23, 24]
Career Mapping / Discovery	Vocational / Electrical	Learner profiling, interest mapping, trade exposure, psychometric indicators	Career Discovery	Electrical Trade Learners / Educators	Discover trade-specific competencies through guided exploration and map profiles to competencies	Diagnostic engines, career logs, and profile matching	NSQF, SAQA / NQF, SDG	[20, 22, 24]
Smart Grid / Renewable Energy Integration	Electrical / Energy	Solar, wind, hybrid systems; MPPT, inverters, batteries; kWh saving calculations	Renewable Energy Sector / Smart Grids	Energy Systems Engineers / TVET Students	Dimension and simulate solar, wind, and hybrid systems; optimize energy consumpti	Portfolio artifact submission, case studies, and yield calculations	SAQA /NQF, ISO/IEC, NFC 15-100	[23 - 25]

					on through IoT data analytics		
Safety Practice and Hand Tools	Electrical / Health & Safety	Safety rules, signs, fire extinguishers (P.A.S.S.), first aid/CPR, waste disposal, PPE, trade hand tools	Safety and Workshop Management	Electrician Trainees / Workshop Personnel	Apply safe working practices and respond to emergencies (e.g., electric shock)	All India Trade Test (AITT) / Practical exercises	NSQF Level 5, BIS/ISI, NEC 2011	[4, 8]
Applied Policing and Crime Resolution	Law Enforcement	Crime Scene Management, Ballistics, Forensic Analysis, MIS	Forensic Investigation and Traffic Management	Law Enforcement Officers and Private Investigators	Apply projectile motion models to ballistic analysis and calculate evidence decay	Portfolio based, formative/summative assessments, and mock trials	NATED and NCV programs	[18]
Security Guarding / SASSETA Programs	Police / Security	Access Control, Emergency evacuation, Firearm safety, Criminal Law, conflict resolution, first aid	Physical Plant Integrity / Private Security	Security Officers / SAPS Applicants	Demonstrate competency in physical security measures, patrol objectives, and regulatory compliance	Summative exam, logbooks, and PSIRA Grading	PSIRA Act, SASSETA Unit Standards	[7, 26]
Engineering Mathematics 5	IT / Mathematics	Second order differential equations, partial differentiation, double integration, Laplace Transforms, Eigenvalues/v	Engineering Systems Analysis	Advanced Higher Students / Engineering Candidates	Solve linear system equations and mathematical problems using advanced	Written and/or recorded oral evidence	SCQF Level 8, SQA	[16]

		ectors			calculus and transform techniques			
Mathematics N6	Engineering Mathematics	Advanced Differential and Integral Calculus, Partial Fractions, Differential Equations, Centroids	Mechanical and Structural Design	Engineering Students (Prerequisite: Mathematics N5)	Solve complex engineering problems using Integration by Parts and volumes of solids of revolution	Continuous Assessment (ICASS) and final exam	NATED Report 191 (N6)	[18]
Career Discovery & Orientation	Vocational / Orientation	Career Expo Models, Workshop-Based Learning, Workplace Simulation, Career Mentoring Pathways	Career Discovery & Orientation	Educators, institutional reformers	Scaffold learner progression from orientation to credentialed trade outcomes	Practical models, assessment tools, digital portfolio creation	SAQA /NQF descriptors	[11]
Fault Finding and Protective Devices N4	Electrical / Electronics	Symptom analysis, Half-cut method, Motor protection (Overload relays), Binary Logic, Oscilloscope analysis	Industrial Fault Diagnosis	Maintenance Technicians / Electricians	Systematically isolate and rectify electrical issues; simplify Boolean expressions for automation	ICASS and 100-mark final exam	NATED Report 191 (N4)	[18]
Electrical Installation Rules	Electrical	OHS Act compliance, SANS 10142-1 regulations, Earthing and Bonding, Alternative Power (Solar/Generators)	Residential and Industrial Wiring	Installation Electricians and Inspectors	Inspect, test, and certify electrical installations for safety and compliance	Theoretical examination and practical visual inspection	SAQA accredited, SANS 10142-1, OHS Act	[18]

BTS Electrotechnique	Electrical	Smart electrical installations, digital technologies, communication systems, energy production/distribution	Smart Grids / Smart Buildings	Technicians (ETAM category)	Design, optimize, and maintain electrical installations; implement innovative technical solutions	Final exams, continuous assessment (CCF), VAE	EQF Level 5, EUR-ACE, French CTI	[9]
UniTrain-I: Electrical Installation Technology	Electrical / IT	DC, AC, and 3-phase systems; electromagnetic compatibility; energy systems; error simulation	Smart Buildings, HVAC, Energy Management	Vocational and Technical students	Development of autonomous technical competencies; mastery of fault detection and safety diagnostics	Knowledge tests, interactive experiments, real-time feedback	VDE/EN safety standards	[9]
National Certificate: Electrical Engineering (NQF 3)	Electrical Engineering	Electrical equipment and protection; domestic appliance repair; MV radial networks; mini substations	Mining, Energy Sector, Manufacturing	Skilled workers / Artisans	Install and commission electrical equipment; maintain and repair equipment; solve familiar problems	Unit Standards Based Assessment	SAQA Qual ID 72051, NQF Level 3	[9]
LOGO! Logic Systems	IT / Electrical	PLC; basic logic programming; special functions (timers, counters); PC-based programming interfaces	Industrial Automation	Industrial Electricians / Automation Technicians	Ability to connect logic modules; realize functional diagrams; program and test complex control tasks	Practical project work, functional testing	IEC 61131, DIN VDE 0113	[9]
KNX	IT /	Bus topology;	Smart	Buildin	Plan,	Protocol	KNX	[9]

Building Automation	Electrical	ETS3 programming; energy optimization; centralized control; sensor integration	Homes / Building Management Systems	g Systems Technicians	design, and parameterize KNX installations; select economic components; perform commissioning	generation, diagnostic testing, fault simulation	Standard, DIN VDE 0100	
Project Management in Electrical Engineering	Electrical Engineering	Project planning, Resource management, Risk management, Integral calculations for project time (T=∫0N ti di)	Electrical Infrastructure	Electrical Engineers	Ability to plan projects and manage resources/risks using calculus-based modeling	VBA-powered marksheet and audit-grade record keeping	SAQA /NQF dashboard integration	[25]
Online Retail and E-commerce in Renewable Energy	Business / Energy	Market trends, customer behavior, B2B frameworks, collaborative filtering algorithms	E-commerce for Renewable Solutions	Business Practitioners in Energy	Gain expertise in leveraging digital platforms to sell renewable solutions	Credential record tableaux tracking	OECD e-commerce definitions	[25]
Advanced Manufacturing in Genetic Engineering	Biotechnology / Manufacturing	CRISPR, Biopharmaceutical manufacturing, Fermentation technology, Quality control	Biotechnology Sector	Biotechnology Engineers	Analyze cutting-edge genetic modification techniques for product development	Registry-ready credential sheets	SAQA /NQF Level 7	[25]
Advanced Wireless Communications	Electronic Engineering	RF spectrum, Signal propagation, Multiple	Telecommunications industry	Electronic Engineers	Design and analyze cellular network	Antenna design workshops	SAQA /NQF	[25]

		access (FDMA, TDMA, CDMA, OFDMA), 5G architecture			architectures and RF systems			
Robotic Process Automation (RPA)	Electrochemical Engineering / Automation	UiPath, Automation Anywhere, Blue Prism, automating control systems	Battery Manufacturing / Fuel Cell Production	Process Engineers	Design and manage automated processes in electrochemical settings	UiPath Lab assessment	SAQA /NQF	[25]
Substation Networks / Design & Distribution	Electrical Engineering	Voltage transformation, fault protection, breaker coordination, transformer sizing	Power Distribution / Smart Grids	Technicians / Protection Engineers	Execute fault level calculations and protection coordination; analyze load flow	Simulation of scenarios, single-line diagrams, and case study artifacts	NQF Level 6-7, IEEE C37, EN 50388	[24, 27]
Inverter and UPS (Module 4)	Electrical	Voltage stabilizers, battery chargers, emergency lights, and UPS systems	Power Backup Solutions	ITI Electrician Trainees	Detect faults and troubleshoot inverter, stabilizer, battery charger, and UPS	Testing, defect analysis, and repair tasks	NSQF Level 5	[14]
Power Generation and Substation (Module 5)	Electrical / Energy	Thermal, hydel, solar, and wind power systems; plant layouts	Smart Grids / Renewable Energy	ITI Electrician Trainees	Plan, assemble and install solar panels; outline power plant layouts	Layout preparation and identification of elements	NSQF Level 5	[14]
Transmission and Distribution (Module 6)	Electrical	HT/LT line insulators, single line diagrams, conductor capacity,	Power Distribution Networks	ITI Electrician Trainees	Erect overhead domestic service lines	Practical installation practice and measurement	NSQF Level 5	[14]

		service line poles						
Circuit Breakers and Relays (Module 7)	Electrical / Safety	Relay operation, pick-up current settings, time multipliers, tripping characteristics	Industrial Protection Systems	ITI Electrician Trainees	Examine faults and carry out repairing of circuit breakers	Tripping characteristic tests for over-current and short-circuit	NSQF Level 5	[14]
Design and Use of Teaching Materials	Didactic / Pedagogical	Creation of teaching aids (set squares, rulers, electrical panels) using recycled/local materials	Experimental Teaching	Teachers / Educators	Pedagogical autonomy and ability to promote active, contextualized, and experimental teaching	Positioning test and final evaluation	ASEI/PDSI approach	[28]
Multi-Phase Metering & Calibration System	Electrical / IT	Energy metrics (kWh, kVA, kVAR), calibration of voltmeters, ammeters, and power factor meters	Smart Grids / Power Distribution	Industrial Technicians / Power Engineers	Competency in reading energy metrics and calibrating industrial measurement instruments	Data byte logging and unit/integration testing	SAQA /NQF	[28]
Visual Basic UI + Embedded Systems Integration	IT / Electronics	RGB Scroll-controlled labels, DAC signal conditioning, LCD interfacing, I2C compass integration	Industrial Automation / Software Engineering	Automation Engineers / Software Developers	Integrate software UI with physical hardware for monitoring and control	Hardware test signatures and UI interaction logs	SAQA /NQF, ISO/IEC	[28]
Drawing Analyse Design System	Mechanical / Civil	Schematic interpretation, fault diagnostics,	Rural Infrastructure Developm	Engineers / Technical	Mastery of visual logic as a diagnostic	LMS analytics on drawing-based	SAQA /NQF descriptors	[29]

		calibration mapping, WA-coded competencies	ent	Educators	tool for technical system repair and compliance	performance		
Microsoft Office – Document Mastery	IT	Character styles, line/page control, pictures, headings, layout, version control	Business Operations	Business Apprentices / Cadets	Advanced proficiency in professional document management and structuring	Modular assessment (2-3 day cycles)	Microsoft Business Certificate Path	[28]
MotorN3	Mechanical / Electrical	Mathematics, Engineering Science, Engineering Drawing, Industrial Electronics, Diesel Trade Theory	Motor Trade / Diesel Mechanics	Trade Apprentices	Attainment of N3 level competency for motor trade qualification	Mark-based assessment (min 50% pass rate)	National N1-N6 TVET framework	[28]
Community Assessor Training	Public Services / HR	ORCE method (Observe, Record, Classify, Evaluate); IT competency	Recruitment and Assessment Centres	Professionally trained assessors	Make objective assessments of performance and competence	Written test, scenarios, and 4-day training course	National Assessment Standard (UK)	[30]
Industrial Control & Automation	IT / Engineering	PLC programming, SCADA integration, RTU programming	Industrial Automation	Automation Technicians	Configure Intelligent Electronic Devices (IEDs) and SCADA systems	Hands-on GOOSE messaging and MMS protocol labs	IEC 61850	[24]
Drawing Interpretation / Technical Interpretation	Mechanical	Drawing analysis, specification translation, schematic interpretation	Manufacturing / Rural Infrastructure	Advanced Apprentices / Technical	Interpret and apply technical documentation; master	Annotated schematics and LMS analytics	MEM50119, SAQA /NQF	[23, 29]

				Educators	visual logic for system repair			
DL NGL-CLOUD	IT / Cloud Computing	IaaS, PaaS, SaaS, XaaS, Storage, security, Apache CloudStack, Ubuntu OS, MySQL	Corporate IT innovation	Students of Next Generation Labs	Configure and use a private Cloud Computing system within a laboratory environment	Practical exercises and simulation	Not in source	[8]
Supply Chain Management and Traceability	Industrial Engineering / IT	Software engineering, flow of goods, traceability system implementation	Industrial Logistics	Master's Students	Enhance supply chain efficiency and transparency using software solutions	Traceability level assignment (Low, Medium, High)	Not in source	[25]
Data Processing and Hosting Services	Computer Engineering	Cloud hosting, Containerization (Docker, Kubernetes), Microservices, Big Data (Hadoop, Spark)	IT Infrastructure	Graduate Students (Master's)	Master the technological infrastructure necessary to host and process vast data amounts	Azure DevOps + SAQA/NQF validation	Not in source	[25]
Didactic Material Instrumentation and Control	Education & Moderation	Curriculum accountability, pedagogy, error recalculation, stress index, memory retention	Career Discipline and Subject Discovery	Learners, Evaluators, and Auditors	Balanced equilibrium between vocational practice and academic theory	Logigram-based decision gates, MAD recalculation	SAQA, NATED, QCTO compliance	[31]
Engineering Signal Systems	Experimental Engineering	Signal validation, instrumentation check,	Industrial Automation & Infrastruct	Technicians and Engine	Validation of engineering	Signal failure re-tests, reliability	ISO/IEC standards,	[31, 32]

		reliability percentage, Fourier/Laplace modulation	ure	ers	outcomes and signal/infrastructure acceptance	percentage	SAQA NQF Level 6	
Psychometrical Testing	Social Science / HR	Aptitude, resilience, stress measurement, personality, profile validation	Career Placement & Labour Rights	Recruiters and Career Counselors	Validated psychometric profile and stress resilience support	Psychometrical battery, quartile distribution	DPSA directives	[31, 32]
Management Information	IT / Administration	Data auditing, record inventory, compliance rate, SQL integration, dashboards	Institutional Reporting & Audit Traceability	Administrators and Compliance Officers	Accountability ensured and compliance clear	Inventory percentage, compliance rate audit, SQL traceability	PFMA compliance, AGSA audit opinion	[31, 32]
PLC Programming (Masterpact/ Modicon)	Electrical / IT	Ladder logic, Modbus integration, HMI design, SCADA Expert, breaking circuits	Industrial Automation	Automation Engineers and Electricians	Implementation of command circuits and digital twin modeling	Trade tests and functional circuit validation	IEC 61499	[32]
Undercurrent/ Overcurrent Protective Devices (Circuit Breakers)	Electrical / Safety	Relay operation, pick-up settings, time multipliers, tripping characteristics	Industrial Protection Systems	ITI Electrician Trainees	Examine faults and repair circuit breakers; test for over-current and short-circuit	Tripping characteristic tests	NSQF Level 5	[5, 14]
Energy: Domestic Systems (Wind/Solar)	Mechanical / Electrical	Wind energy principles, solar hot water harnessing, thermodynamic processes	Smart Grids / Domestic Energy	TVET Students / Plumbers	Practical and theoretical understanding of domestic renewable systems	Real-world problem solving and role-play	SCQF Level 4/5, UK Renewable Energy NOS	[19]

Electrical Measuring Instrumentation	Electrical	Categorization of instruments, repair techniques, measurement of resistance	Maintenance and Testing	Artisans / TVET students	Repair instruments and recognize measurement techniques	Certificate-based Assessment	SAQA Level 4-6	[19, 27]
Advanced Diploma: Electrical Technology	Electrical	Resistor applications, circuit analysis, electric shock prevention	Electrical Infrastructure / Safety	Advanced Engineering Students	Evaluate unknown resistance and prevent electric shocks	Problem-based assessments; MATLAB/ Python simulations	SAQA /NQF Level 5, WA bench marks	[19, 27]
Star-Delta Motor Starting	Electrical / Mechanical	Timed relay sequencing, voltage transitions, torque spike mitigation	Industrial Drives / Automation	Artisans / Technicians	Execute motor control tuning and fault analysis	Diagnostic logic simulation (Python/VBA)	NQF Level 4-6, SAQA Codes	[27]
Basics of Smart Meter Installation	Electrical / IT	Smart power grids, smart meter benefits, installation techniques	Smart Grids / Modern Infrastructure	Automation Engineers / Technicians	Install and manage smart metering systems	Not in source	Advanced Level (Alison)	[19]
Analogue Input Modules	Industrial Automation / IT	Intrinsic safety isolators, 4/20mA transmitter loops, HART communication	Safety Instrumented Systems (SIS)	Automation / Safety Engineers	Repeat current within ±2% accuracy and interface with Logic Solvers	Hardware Safety Integrity Assessment	IEC 61508: 2010 (SIL 2), IEC 62061	[33]
Analyzing Reliability in the Data Center	IT / Information Systems	Redundancy, Probabilistic Risk Assessment (PRA), modular architecture, UPS performance	Data Centers	Data center operations staff	Define reliability risks, identify common cause failures, and recognize benefits of	Test Your Knowledge (Test)	M Technology, Inc. bench marks	[33]

					PRA			
Fundamentals of Health Care Power Systems	Electrical Engineering	Essential Electrical Systems, alternate power sources, Life Safety/Critical /Equipment Branches	Hospitals and Health Care Facilities	Not in source	Identify codes and standards; describe elements of Essential Electrical Systems	Test Your Knowledge (Test)	NFPA 70, NFPA 99, OSHA	[33]
Medical Gas and Vacuum Systems	Healthcare / Plumbing	Oxygen, Medical Air, Nitrous Oxide, Vacuum Systems, WAGD	Medical treatment facilities	Not in source	Discuss purpose of plumbing and medical gas systems; identify types of vacuum systems	Test Your Knowledge (Test)	NFPA 99, FGI Guidelines, ASSE	[33]
Combined Heat and Power (Cogeneration)	Energy Efficiency	Topping Cycle, Bottoming Cycle, Combined Cycle, thermodynamic processes	Industrial Heat and Power	Energy Managers	Define cogeneration and identify fuels; evaluate CHP plant application factors	Test Your Knowledge	Not in source	[33]
Low Voltage Fundamentals	Electrical	LV fundamentals, Primary Distribution, Motor Management, protection, cost optimization	Power Distribution	Not in source	Gain core knowledge in Primary Distribution and Motor Management	Not in source	Not in source	[33]
Applied Safety Rules (YT00001EN)	Health & Safety	Electrical hazards, safety equipment, PPE, product sizing	Job site safety	Student / Professionals	Define principal safety rules, identify PPE, and	Quiz	International (French Ministry)	[33]

memorize
safe habits

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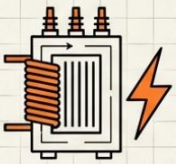
EXECUTIVE PROFILE: THE POLYMATH APPROACH

ELECTRICAL ENGINEERING



Expertise in PV installation (6.5kW – 250kW), MV/LV transformers, and Smart Grid connectivity using MKM35512 Series metering. Focus on heavy current systems and grid integration.

SOFTWARE DEVELOPMENT

Full-stack capabilities in VB.NET and C#, focused on secure database management, ATM banking logic, and automated registration systems. Transforming logic into functional code.

LEGAL & SECURITY OPS

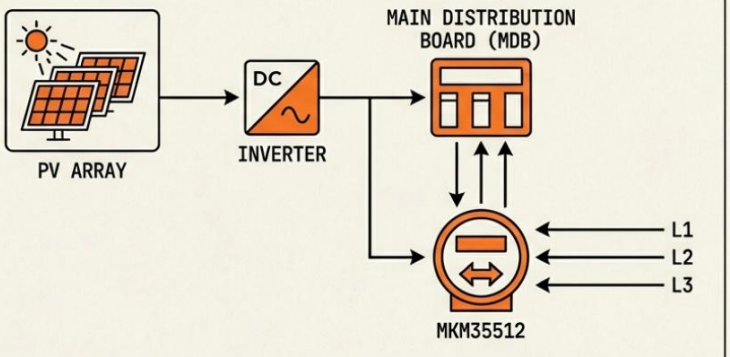
Deep understanding of South African legal frameworks (Domestic Violence Act 116 of 1998, POPIA) applied to the design of secure Crime Management Systems.

KEY INSIGHT: Transforming manual administrative bottlenecks into streamlined, automated digital workflows.

NotebookLM

POWER INFRASTRUCTURE & RENEWABLE ENERGY

- **PV Systems**: Design/Install range 6.5kW to 250kW (Grid-Tied).
- **Grid Integration**: Main Station Substation management (MV/LV Transformers).
- **Protection**: SPD (Surge Protection Devices) & Tesys Motor Management.
- **Connection**: 3-Phase Utility Network (L1, L2, L3).



SLD SCHEMATIC

KEY INSIGHT: Seamless integration of renewable energy with robust grid infrastructure for intelligent, resilient power management.

NotebookLM

POWER INFRASTRUCTURE & RENEWABLE ENERGY

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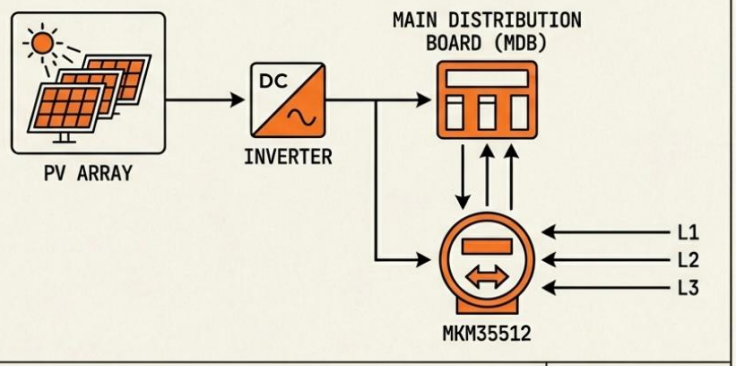
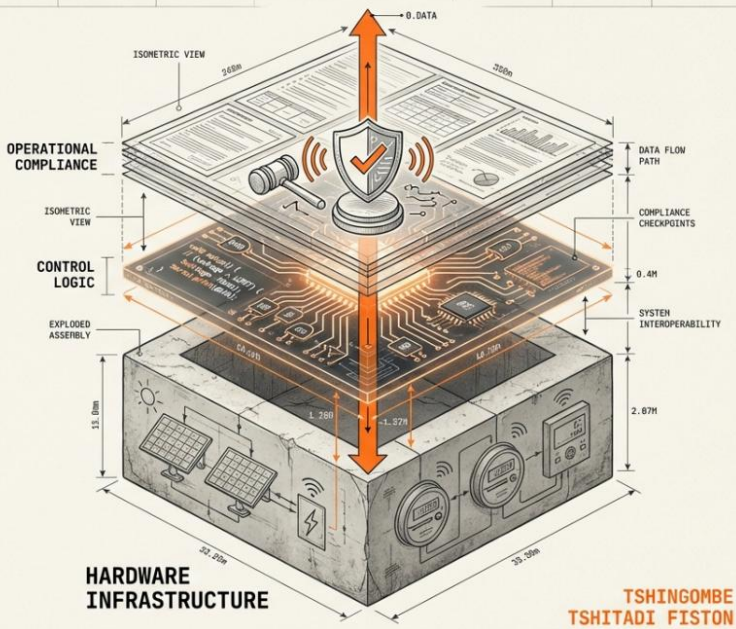


KEY INSIGHT: Seamless integration of renewable energy with robust grid infrastructure for intelligent, resilient power management.

NotebookLM

INTEGRATED INTEGRATED SYSTEMS & ENGINEERING PORTFOLIO

Bridging High-Voltage Engineering, Software Architecture, and Legal Compliance Frameworks.



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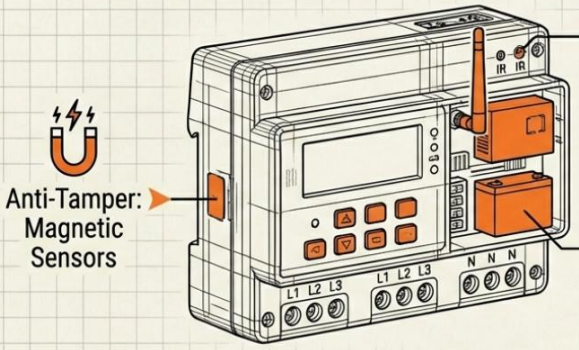
NotebookLM

ADVANCED METERING INFRASTRUCTURE (AMI)

MKM35512 Series Three-Phase Smart Meter



MEASUREMENT SPECS

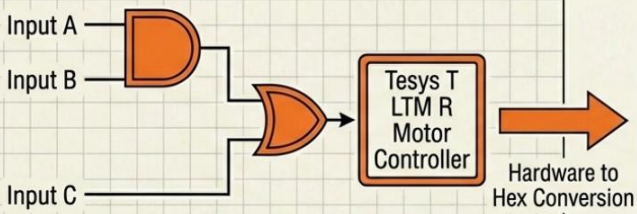
- Active Energy: $\int u\, i\, dt$
- Nominal Voltage: 240VAC ±20%
- Current Range: 0-60A
- Frequency: 50Hz ±5%
- 4-Quadrant Measurement (Import/Export)

Hardware design includes analog signal conditioning and digital circuit integration.

NotebookLM

INDUSTRIAL AUTOMATION & PLC LOGIC

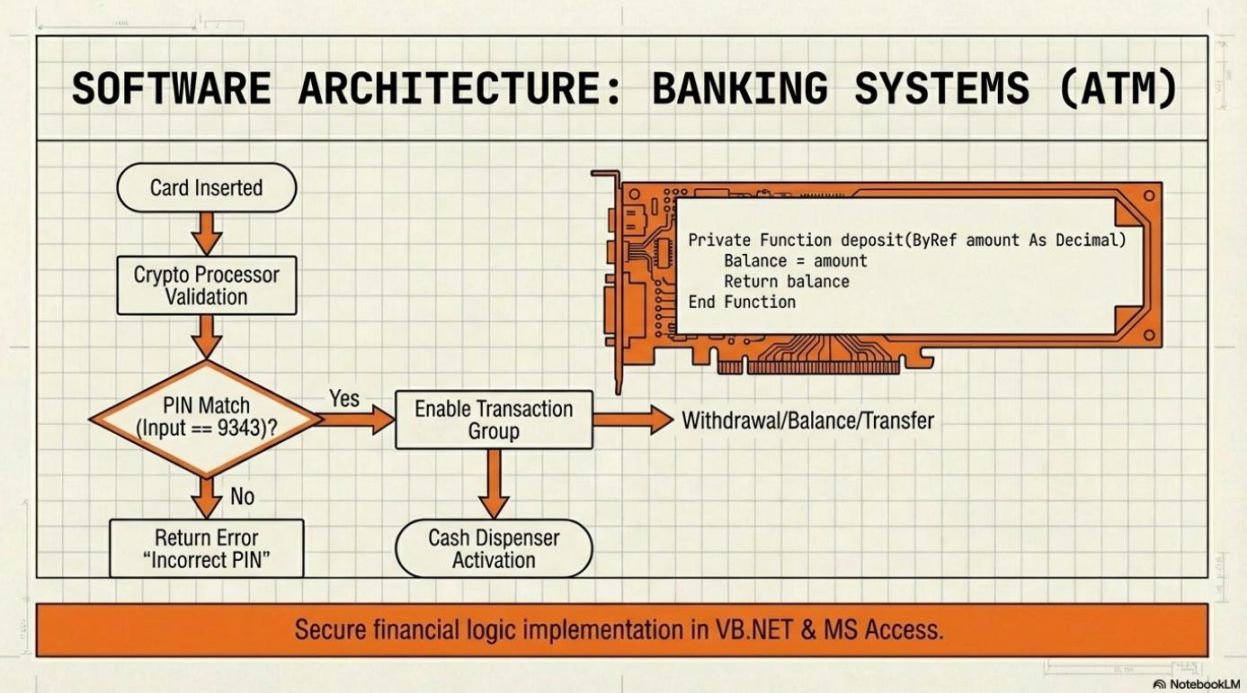
HARDWARE LOGIC DIAGRAM

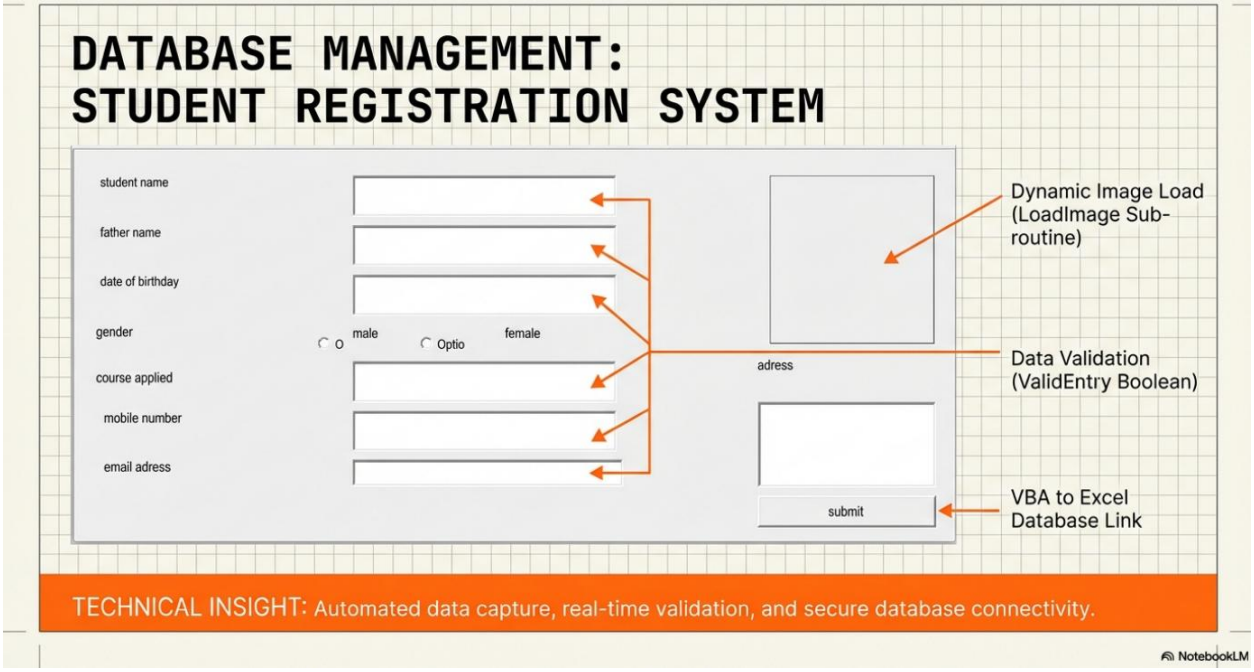



```
// PLC READ/WRITE COMMAND STRUCTURE
string Cmd = "";

Cmd = cmd + "5000"; // Sub Head (Net)
Cmd = cmd + "FF";   // PLC Number
Cmd = cmd + "000A"; // CPU Inspector Data
Cmd = cmd + "0401"; // Read Command

// Address Decoding
DeviceCode = "D*";
TargetAddress = "009500";
```

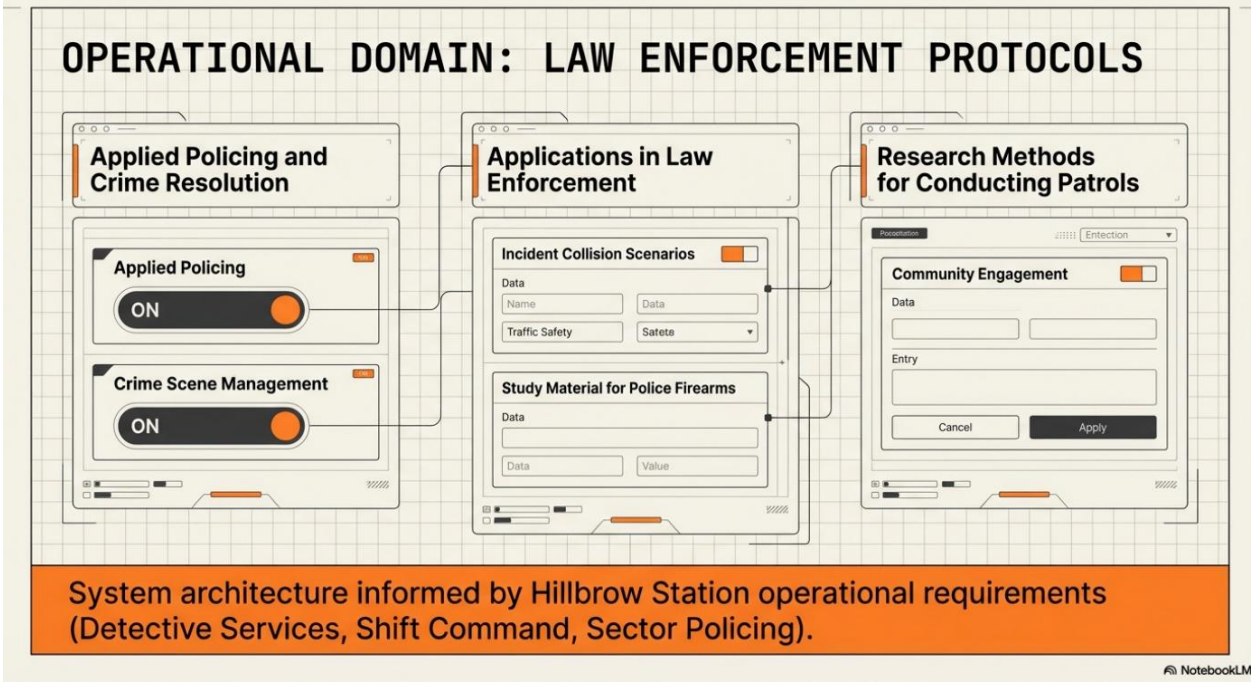
TECHNICAL INSIGHT: Staptical automation & crocoritic senseity, operatons, and encillation.

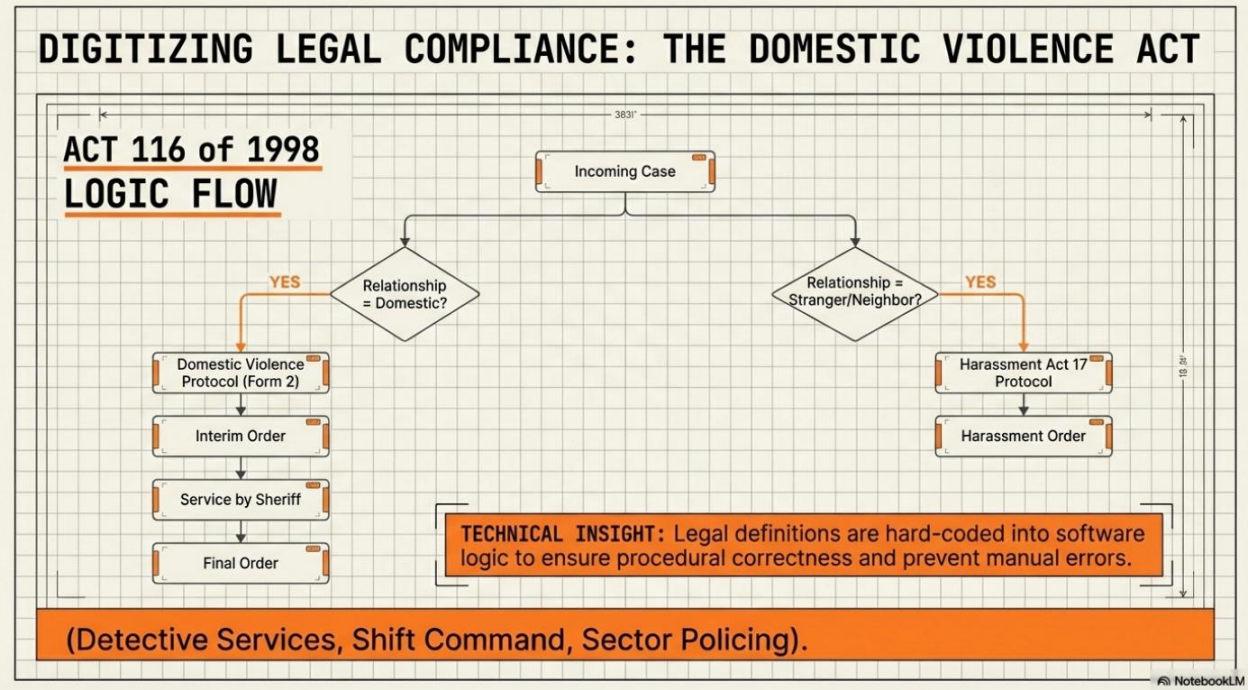
NotebookLM

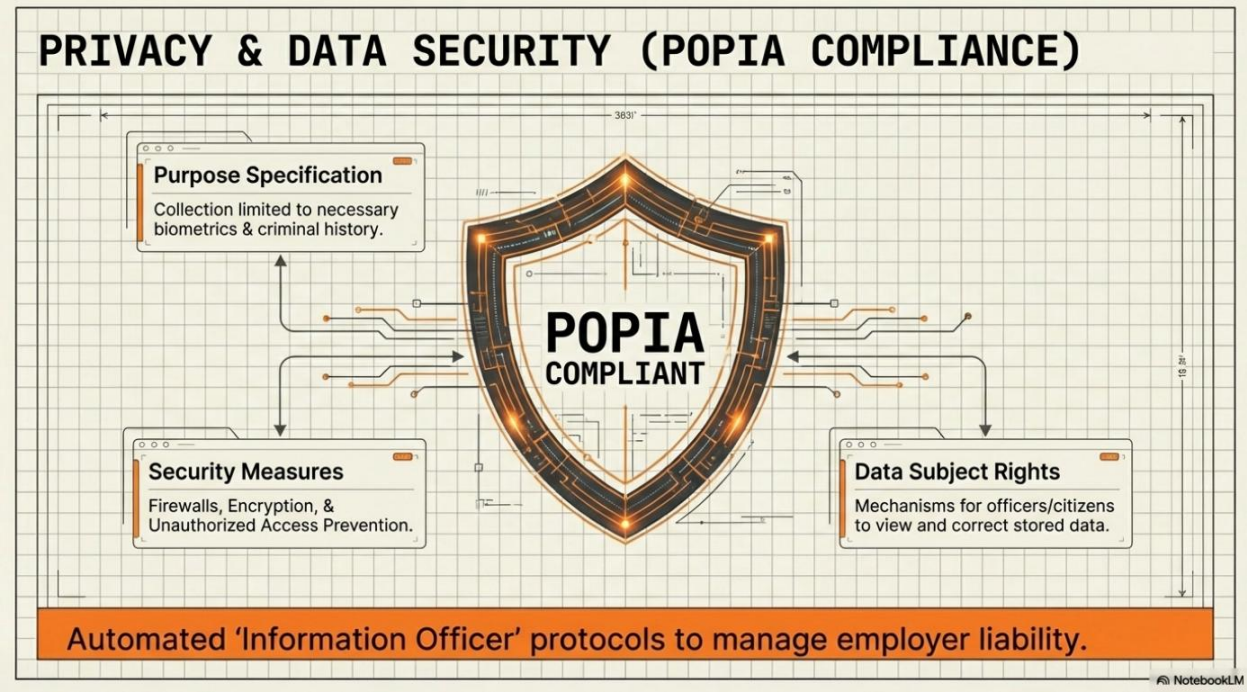

SOFTWARE ARCHITECTURE: BANKING SYSTEMS (ATM)
Card Inserted
Crypto Processor Validation
PIN Match (Input == 9343)?
Yes
No
Enable Transaction Group
Withdrawal/Balance/Transfer
Return Error "Incorrect PIN"
Cash Dispenser Activation
Private Function deposit(ByRef amount As Decimal)
Balance = amount
Return balance
End Function
Secure financial logic implementation in VB.NET & MS Access.
NotebookLM

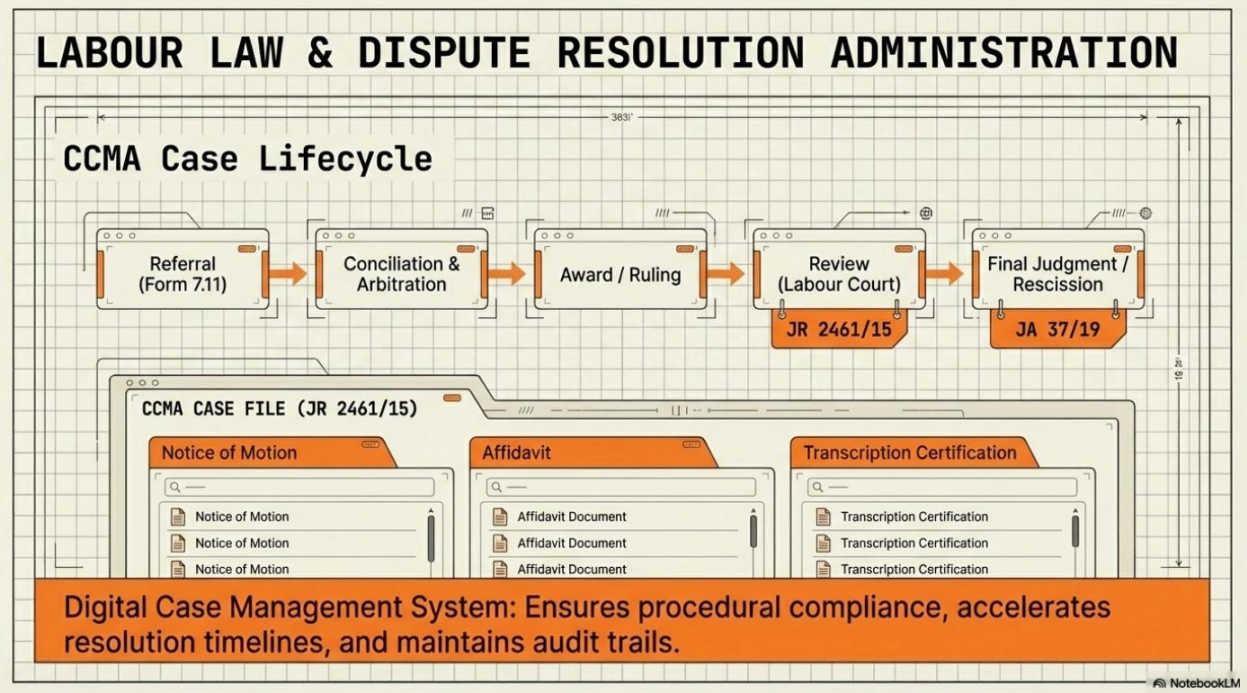

DATABASE MANAGEMENT:
STUDENT REGISTRATION SYSTEM
student name
father name
date of birthday
gender
male
female
course applied
mobile number
email adress
adress
submit
Dynamic Image Load (LoadImage Sub-routine)
Data Validation (ValidEntry Boolean)
VBA to Excel Database Link
TECHNICAL INSIGHT: Automated data capture, real-time validation, and secure database connectivity.
NotebookLM

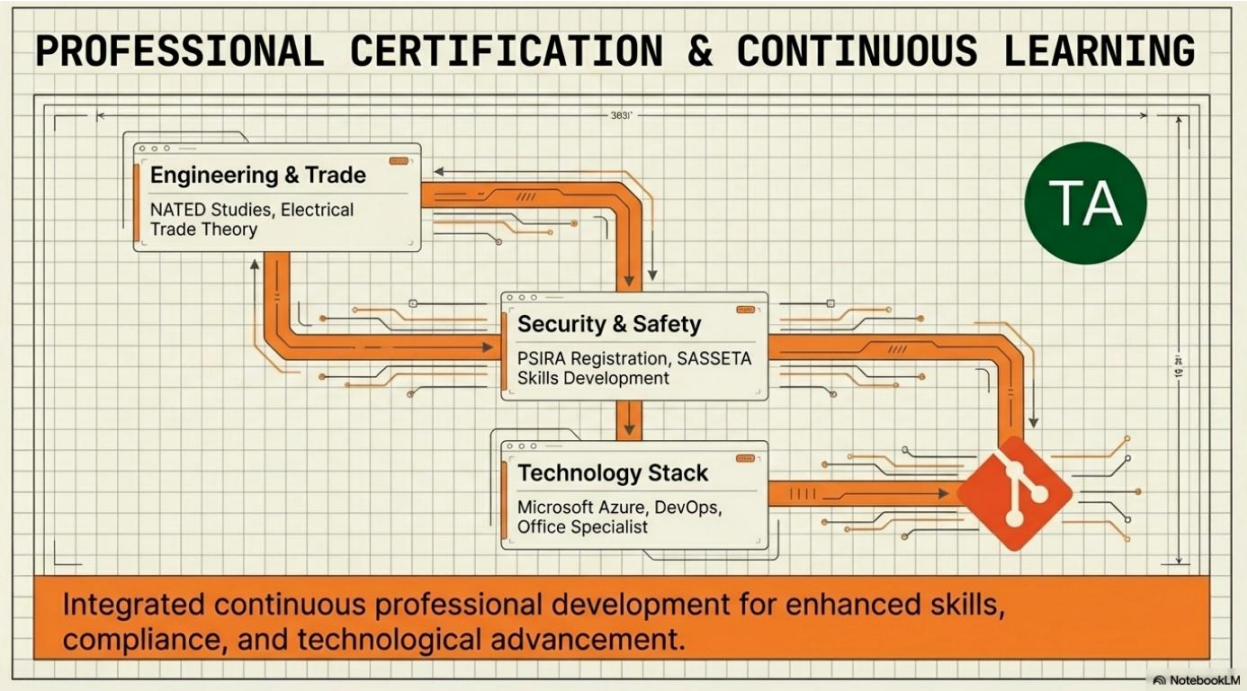
WEB-BASED CRIME MANAGEMENT SYSTEM
The Problem: Manual Records (Samara City / Hillbrow).
Inefficient Data Access
Lost Files
Time-Consuming Retrieval
The Solution: Digital transformation for efficient crime prevention, storage, and retrieval.
TECHNICAL INSIGHT: Secure, centralized data platform for real-time collaboration and analysis.
NotebookLM


OPERATIONAL DOMAIN: LAW ENFORCEMENT PROTOCOLS
Applied Policing and Crime Resolution
Applied Policing
ON
Crime Scene Management
ON
Applications in Law Enforcement
Incident Collision Scenarios
Data
Name
Data
Traffic Safety
Study Material for Police Firearms
Data
Data
Value
Research Methods for Conducting Patrols
Community Engagement
Data
Entry
Cancel
Apply
System architecture informed by Hillbrow Station operational requirements (Detective Services, Shift Command, Sector Policing).
NotebookLM


DIGITIZING LEGAL COMPLIANCE: THE DOMESTIC VIOLENCE ACT
ACT 116 of 1998
LOGIC FLOW
Incoming Case
Relationship = Domestic?
YES
Domestic Violence Protocol (Form 2)
Interim Order
Service by Sheriff
Final Order
Relationship = Stranger/Neighbor?
YES
Harassment Act 17 Protocol
Harassment Order
TECHNICAL INSIGHT: Legal definitions are hard-coded into software logic to ensure procedural correctness and prevent manual errors.
(Detective Services, Shift Command, Sector Policing).
NotebookLM

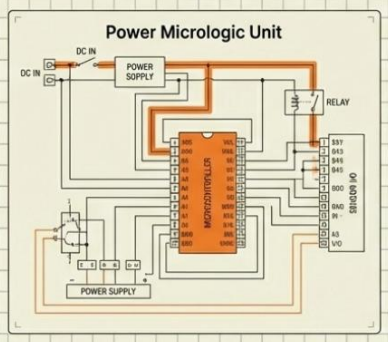

PRIVACY & DATA SECURITY (POPIA COMPLIANCE)
Purpose Specification
Collection limited to necessary biometrics & criminal history.
POPIA
COMPLIANT
Security Measures
Firewalls, Encryption, & Unauthorized Access Prevention.
Data Subject Rights
Mechanisms for officers/citizens to view and correct stored data.
Automated 'Information Officer' protocols to manage employer liability.
NotebookLM


LABOUR LAW & DISPUTE RESOLUTION ADMINISTRATION
CCMA Case Lifecycle
Referral (Form 7.11)
Conciliation & Arbitration
Award / Ruling
Review (Labour Court)
JR 2461/15
Final Judgment / Rescission
JA 37/19
CCMA CASE FILE (JR 2461/15)
Notice of Motion
Notice of Motion
Notice of Motion
Notice of Motion
Affidavit
Affidavit Document
Affidavit Document
Affidavit Document
Transcription Certification
Transcription Certification
Transcription Certification
Transcription Certification
Digital Case Management System: Ensures procedural compliance, accelerates resolution timelines, and maintains audit trails.
NotebookLM


PROFESSIONAL CERTIFICATION & CONTINUOUS LEARNING
Engineering & Trade
NATED Studies, Electrical Trade Theory
TA
Security & Safety
PSIRA Registration, SASSETA Skills Development
Technology Stack
Microsoft Azure, DevOps, Office Specialist
Integrated continuous professional development for enhanced skills, compliance, and technological advancement.
NotebookLM

PROJECT GALLERY: FROM CIRCUIT TO CODE

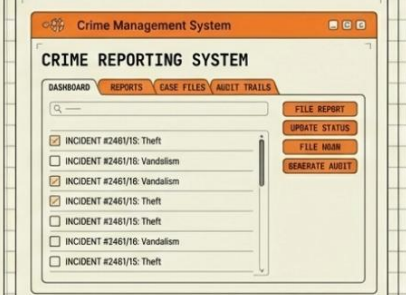
HARDWARE



LOGIC

```
// ATM PIN Validation Logic
bool validatePIN(int inputPIN, int storedPIN) {
    const int MAX_ATTEMPTS = 3;
    static int attempts = 0;
    if (inputPIN == storedPIN) {
        attempts = 0;
        return true; // Access Granted
    } else {
        attempts++;
        if (attempts >= MAX_ATTEMPTS) {
            lockAccount();
            return false; // Account Locked
        }
        return false; // PIN Incorrect
    }
}
```

INTERFACE



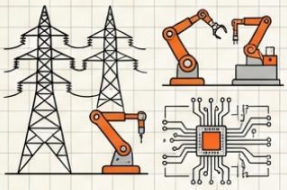
A multidisciplinary approach where hardware constraints inform software design.

NotebookLM

VALUE PROPOSITION: THE INTEGRATED SYSTEMS SPECIALIST

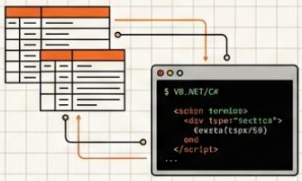
BUILD. CODE. COMPLY.

BUILD:



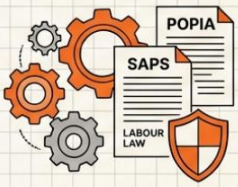
High-voltage infrastructure & industrial automation.

CODE:



Secure, database-driven applications (VB.NET/C#).

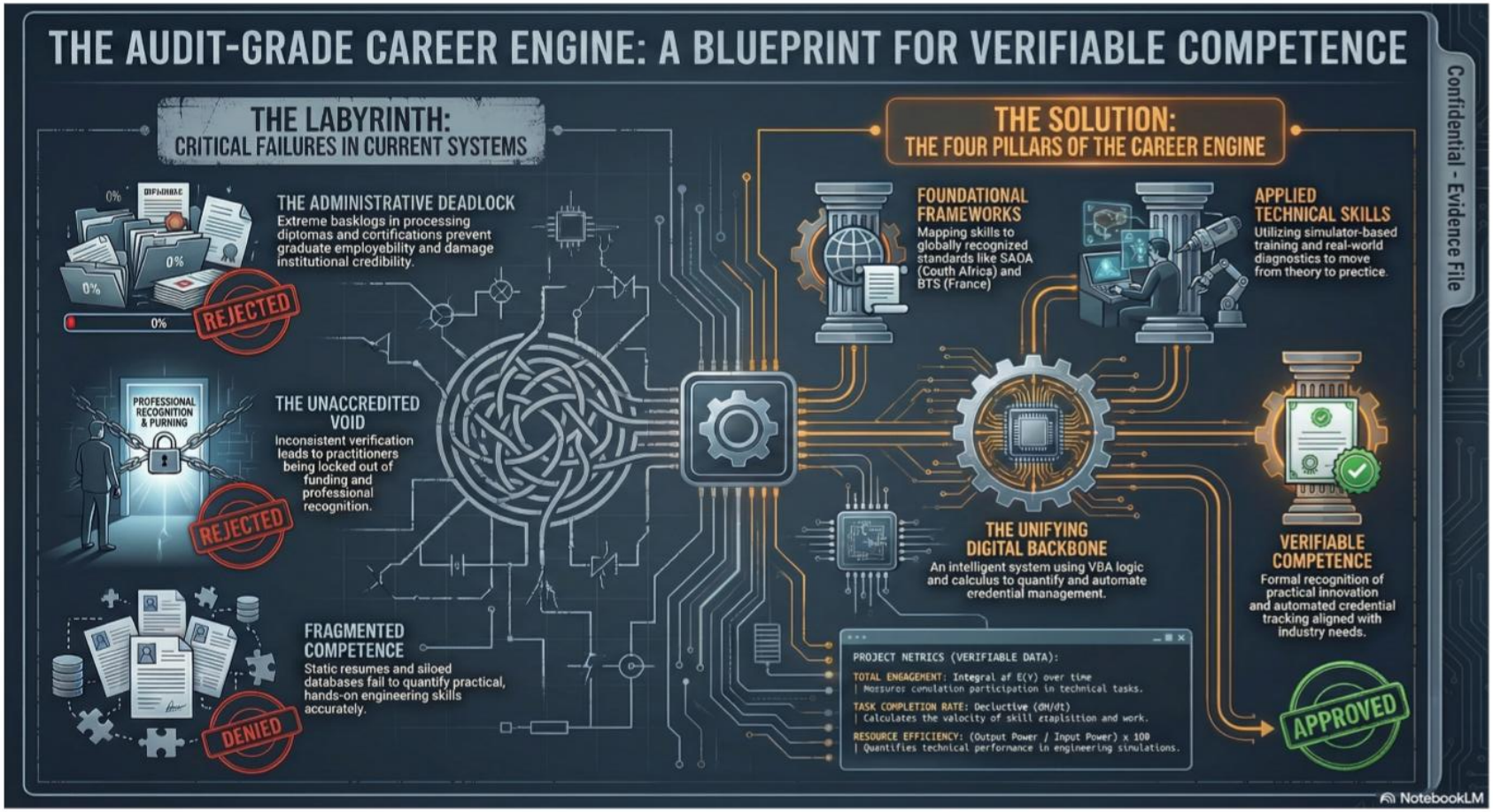
COMPLY:



Systems engineered for POPIA, SAPS, and Labour Law standards.

Ready to deploy secure, compliant, and engineered technical solutions.

NotebookLM


THE AUDIT-GRADE CAREER ENGINE: A BLUEPRINT FOR VERIFIABLE COMPETENCE
THE LABYRINTH:
CRITICAL FAILURES IN CURRENT SYSTEMS
THE ADMINISTRATIVE DEADLOCK
Extreme basklogs in processing diptomas and cortifications prevent graduate employebility and damage institutional credibility.
REJECTED
THE UNACCREDITED VOID
Inconsistent verification leads to practitioners being locked out of funding and professional recognition.
PROFESSIONAL RECOGNITION & PURNING
REJECTED
FRAGMENTED COMPETENCE
Static resumes and siloed databases fail to quantify practical, hands-on engineering skills accurately.
DENIED
THE SOLUTION:
THE FOUR PILLARS OF THE CAREER ENGINE
FOUNDATIONAL FRAMEWORKS
Mapping skills to globally recognized standards like SAOA (Couth Africa) and BTS (France)
APPLIED TECHNICAL SKILLS
Utilizing simulator-based training and real-world diagnostics to move from theory to prectice.
THE UNIFYING DIGITAL BACKBONE
An intelligent system using VBA logic and calculus to quantify and automate eredential management.
VERIFIABLE COMPETENCE
Formal recognition of practical innovation and automated credential tracking aligned with industry needs.
APPROVED
PROJECT NETRICS (VERIFIABLE DATA):
TOTAL ENGAGEMENT: Integral af E(Y) over time
| Mossuror conulation participation in technical tasks.
TASK COMPLETION RATE: Decluctive (dN/dt)
| Calculates the valocity of skill etaplsition and work.
RESOURCE EFFICIENCY: (Output Power / Input Power) x 100
| Quantifies technical perfornance in engineering simulations.
Confidential - Evidence File
NotebookLM

The Career Engine: A Blueprint for Verifiable Professional Competence

Addresses systemic friction in Technical and Vocational Education and Training (TVET). Replaces static, fragmented resurnes with an automated system using Visual Basic logic and calculus to track, quantify, and map real-world engineering skills to global qualification standards.

THE SYSTEMIC LABYRINTH

The Fragmentation of Competence
Qualifications exist in siloed databases while practical, hands-on skills remain unquantified and unverified.

Administrative Deadlocks & Backlogs
Extreme delays in processing results and diplomas provent graduate employability and damage institutional credibility.

The Curriculum-Industry Gap
A disconnect persists between theoretical "trade theory" and the technical needs of modern industry.

THE THREE PILLARS OF THE SOLUTION

Foundational & Applied Frameworks
Mapping local skills to global standards (SAQA, NQF, BTS) using modular, simulator-based training.

The Unifying Digital Backbone
An intelligent layer using VBA logic and calculus to automate reporting and quantify performance.

Audit-Grade Credentialing
Generates verifiable, blockchain-ready outputs that link specific unit standards to demonstrated technical mastery.

S.E.E.E.I.S.U.A. INFRASTRUCTURE METRICS

Annual Energy Index: 3600 kWh

Conflict Lead Management: 70,000 MW

Budget Forecast: R50 Billion

NotebookLM

Understanding Protection Orders in South Africa: Your Legal Path to Safety

The South African legal system provides specific court orders to protect individuals from abuse and harassment. The process is designed to offer immediate, interim protection while the court considers making the order final. Understanding which type of order fits your situation is the first step.

Domestic Violence Protection Order (DPO)

For abuse from someone you have a domestic relationship with (e.g., family, partner, roommate).

Relationship Required?
Yes, a domestic relationship is required.

Pattern of Abuse?
Requires a pattern of abusive actions.

Examples:
Physical, sexual, financial, emotional abuse.

Which Protection Order Do You Need?

Harassment Protection Order (HPO)

For abuse from someone you are not in a domestic relationship with (e.g., a neighbor).

Relationship Required?
No relationship is required.

Pattern of Abuse?
A single incident can be sufficient.

Examples:
Unwanted messages, stalking, financial harm.

The 4-Step Process to Get a Protection Order

1. Apply at the Magistrate's Court
Complete the required application form (Form 2) with a detailed affidavit explaining the abuse.

2. Obtain an Interim Order
The court reviews your application and may issue a temporary order for immediate protection.

3. Serve the Order
The interim order must be officially served on the respondent by a sheriff or police officer.

4. Attend the Court Hearing
The court hears evidence to decide whether to grant a permanent, final protection order.

What if the Order is Violated?

Breaching a protection order is a criminal offense punishable by a fine or up to 5 years in prison.

NotebookLM

Understanding Protection Orders in South Africa: Your Legal Path to Safety

The South African legal system provides specific court orders to protect individuals from abuse and harassment. The process offers immediate, interim protection while the court considers making the order final. Understanding which type of order fits your situation is the first step.

WHICH PROTECTION ORDER DO YOU NEED?

DOMESTIC VIOLENCE PROTECTION ORDER (DPO)

For abuse from someone you have a domestic relationship with (e.g., family, partner, roommate).

HARASSMENT PROTECTION ORDER (HPO)

For abuse from someone you are not in a domestic relationship with (e.g., a neighbor).

KEY DIFFERENCES

DOMESTIC VIOLENCE PROTECTION ORDER (DPO)		HARASSMENT PROTECTION ORDER (HPO)
Yes, a domestic relationship is required.	RELATIONSHIP REQUIRED?	No relationship is required.
Requires a pattern of abusive actions.	PATTERN OF ABUSE?	A single incident can be sufficient.
Physical, sexual, financial, emotional abuse.	EXAMPLES	Unwanted messages, stalking, financial harm.

THE 5-STEP PROCESS TO GET A PROTECTION ORDER

1. APPLY AT THE MAGISTRATE'S COURT

Complete the required application form (Form 2) with a detailed affidavit explaining the abuse.

2. OBTAIN AN INTERIM ORDER

The court reviews your application and may issue a temporary order for immediate protection.

3. SERVE THE ORDER

The interim order must be officially served on the respondent by a sheriff or police officer.

4. ATTEND THE COURT HEARING

The court hears evidence to decide whether to grant a permanent, final protection order.

WHAT IF THE ORDER IS VIOLATED?

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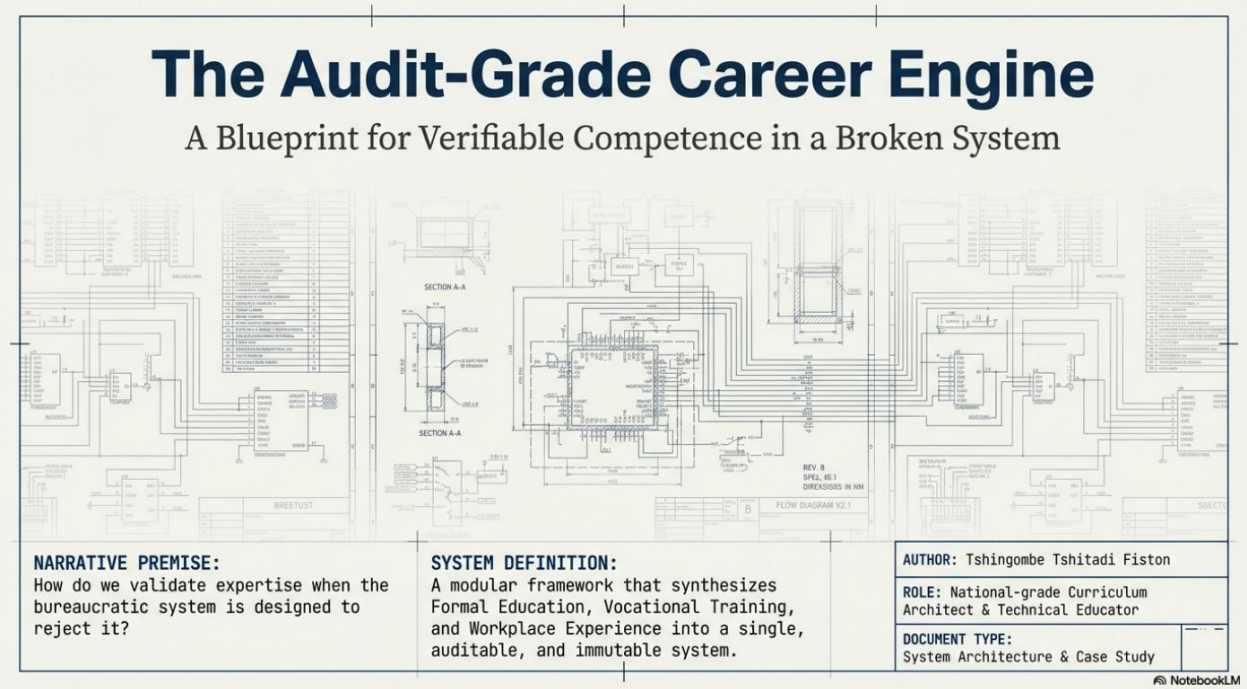
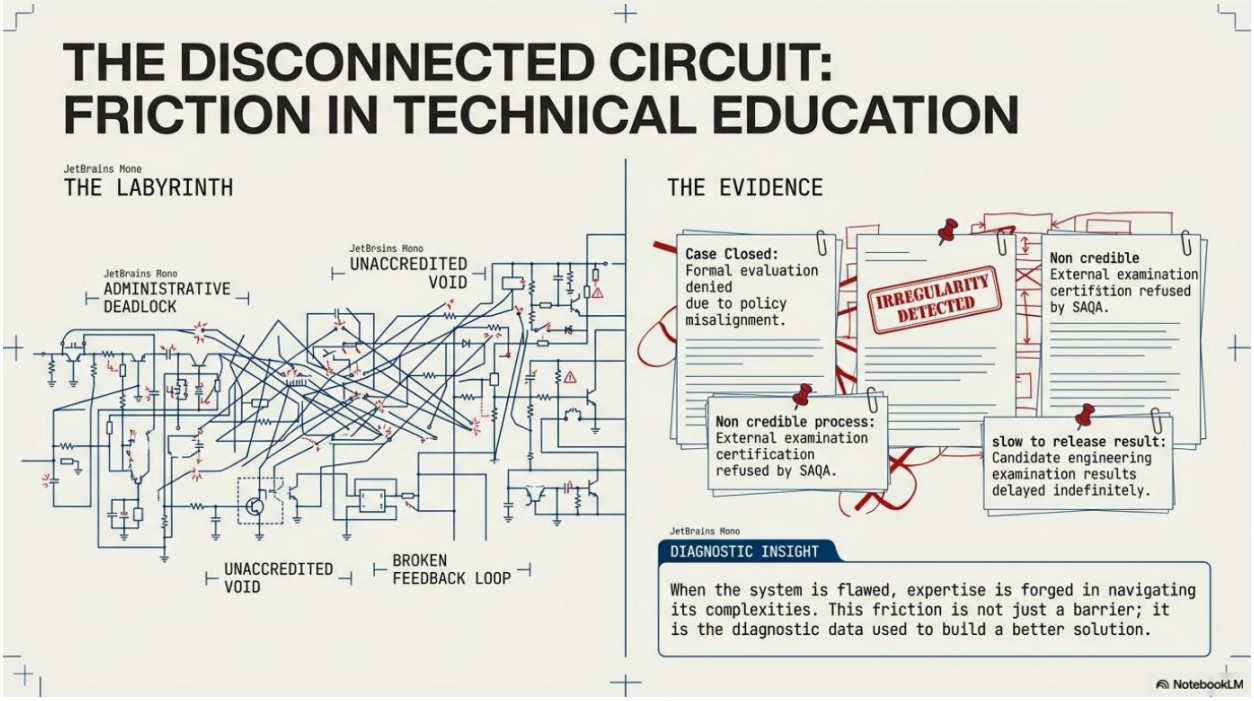
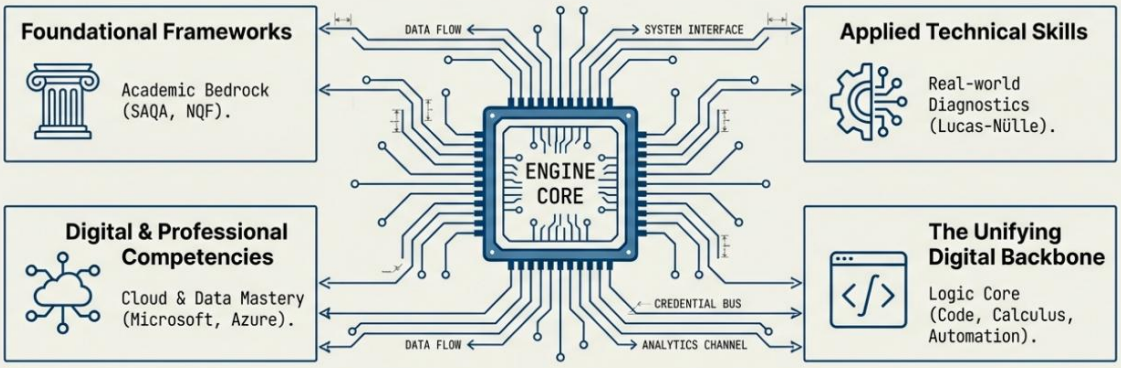
NotebookLM


The Audit-Grade Career Engine
A Blueprint for Verifiable Competence in a Broken System
NARRATIVE PREMISE:
How do we validate expertise when the bureaucratic system is designed to reject it?
SYSTEM DEFINITION:
A modular framework that synthesizes Formal Education, Vocational Training, and Workplace Experience into a single, auditable, and immutable system.
AUTHOR: Tshingombe Tshitadi Fiston
ROLE: National-grade Curriculum Architect & Technical Educator
DOCUMENT TYPE:
System Architecture & Case Study
NotebookLM


THE DISCONNECTED CIRCUIT:
FRICTION IN TECHNICAL EDUCATION
THE LABYRINTH
ADMINISTRATIVE DEADLOCK
UNACCREDITED VOID
UNACCREDITED VOID
BROKEN FEEDBACK LOOP
THE EVIDENCE
Case Closed: Formal evaluation denied due to policy misalignment.
IRREGULARITY DETECTED
Non credible External examination certifstion refused by SAQA.
Non credible process: External examination certification refused by SAQA.
slow to release result: Candidate engineering examination results delayed indefinitely.
DIAGNOSTIC INSIGHT
When the system is flawed, expertise is forged in navigating its complexities. This friction is not just a barrier; it is the diagnostic data used to build a better solution.
NotebookLM

A New Paradigm: The Integrated Credentialing Engine

From static resumes to dynamic, data-driven audit trails.



A modular system that maps every skill, qualification, and experience to a verifiable data point, generating audit-grade documentation for bodies like SAQA, AIU, and ASIC.

NotebookL

Bridging Theory and Diagnostics

PILLAR 01: THEORY

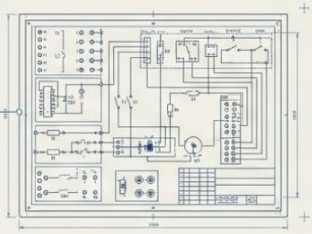
JetBrains Mono

SAQA & NQF Alignment

National Certificate: Electrical Engineering (ID 72071)
Global Portability: Alignment with French BTS (Brevet de Technicien Supérieur).
Competency Block: RNCP41007BC01 - Preliminary study and design.

PILLAR 02: PRACTICE

JetBrains Mono



Simulation & Diagnostics

Hardware: Lucas-Nülle UnitTrain & InTrain Systems.
Curriculum: NIMI Electrician Trade (NSQF Level 5).
Module 3 Focus: Wires, Joints, U.G. Cables (125 Hrs).

THE TAKEAWAY: The Engine ensures that a certified engineer has not just passed a test, but has physically diagnosed faults and designed installations.

NotebookLM

The Digital Backbone & Automation Layer

Pillars 3 & 4

Digital Competencies

Salesforce Career Pathways: Technical Architect, API Integration.

Microsoft Learn: Data Engineering on Azure, Synapse Serverless SQL.

Advanced Computing: Spatial Computing in Telecoms, Big Data (Hadoop, Spark).

The Logic Core (VBA Automation)

VBA MODULE

```
Type CalculationRecord
    DateStamp As Date
    MethodUsed As String
    SimulationTool As String
    ResultSummary As String
End Type
```

Code structures national curricula into modules, automatically calculating promotion marks.

NotebookLM

Quantifying Performance with Code and Calculus

We don't guess competence. We calculate it.

Total Engagement / Effort

$$E_{\text{total}} = \int_0^T E(t)dt$$

Wind Energy Harvested

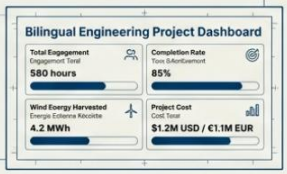
$$E = \int_0^T \frac{1}{2}\rho A v^3 \eta dt$$

Rate of Task Completion

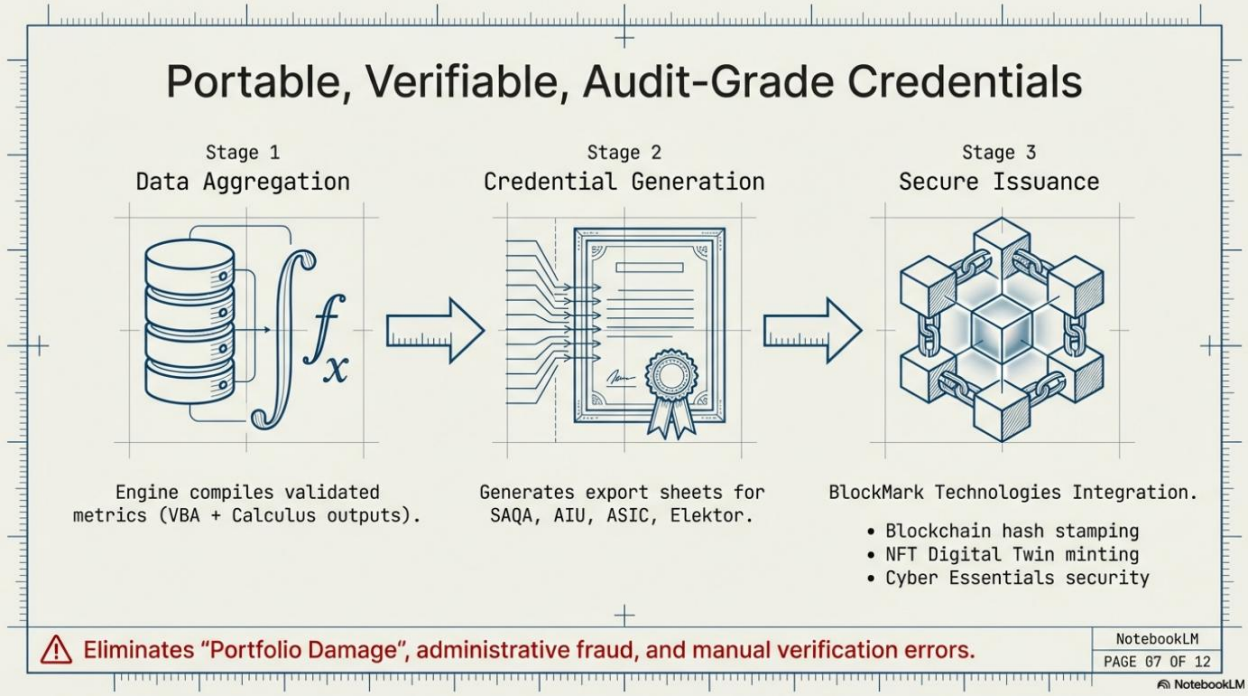
$$\frac{dN}{dt}$$

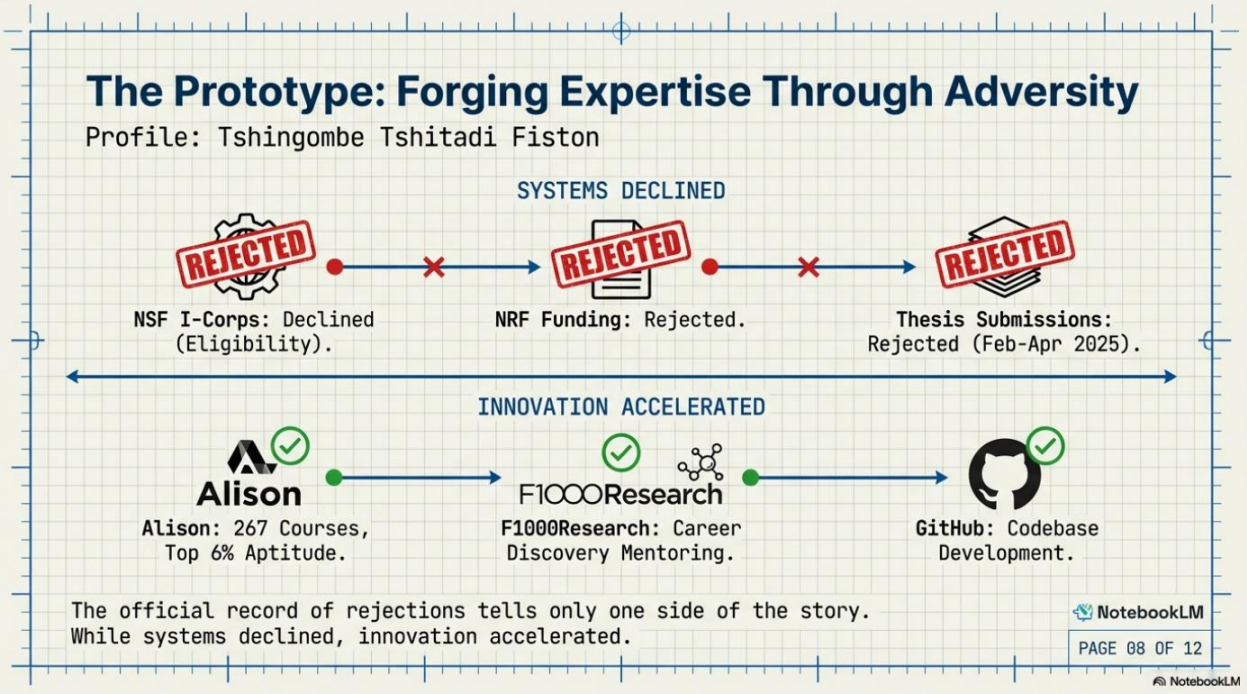
Project Cost Aggregation

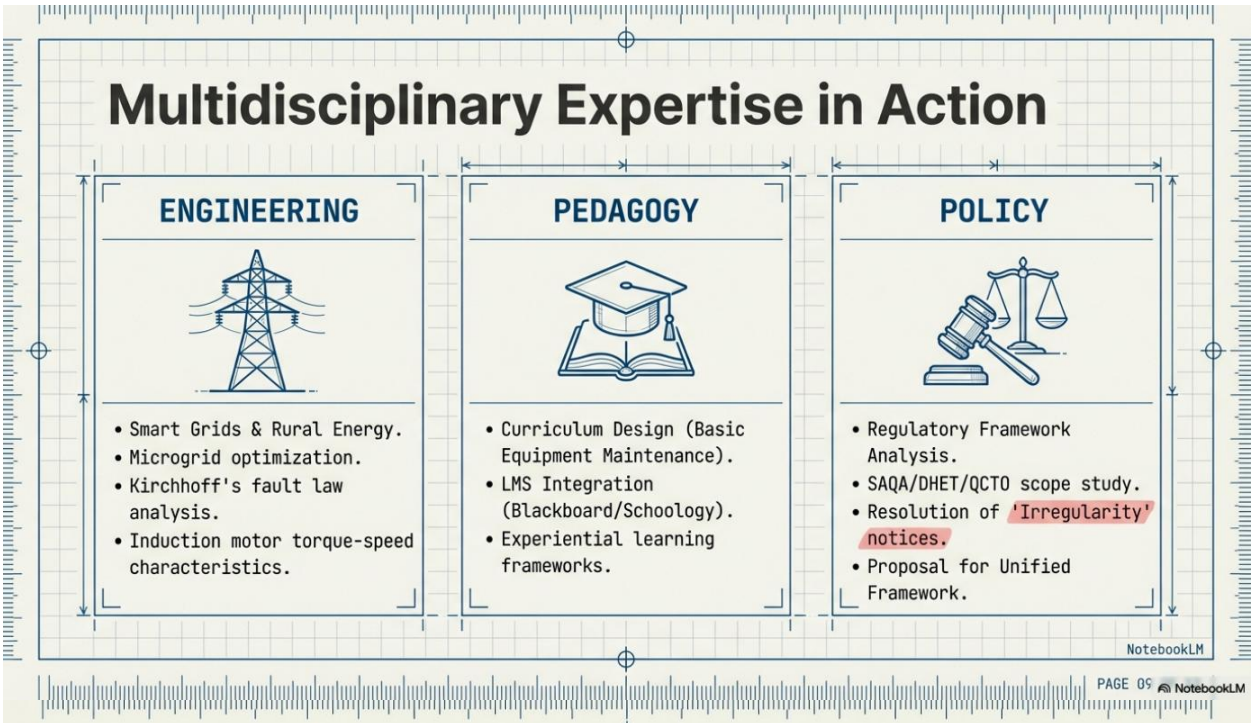
$$C_{\text{total}} = \sum (M_{\text{material}} + H_{\text{human}} + S_{\text{stationery}} + B_{\text{building}})$$

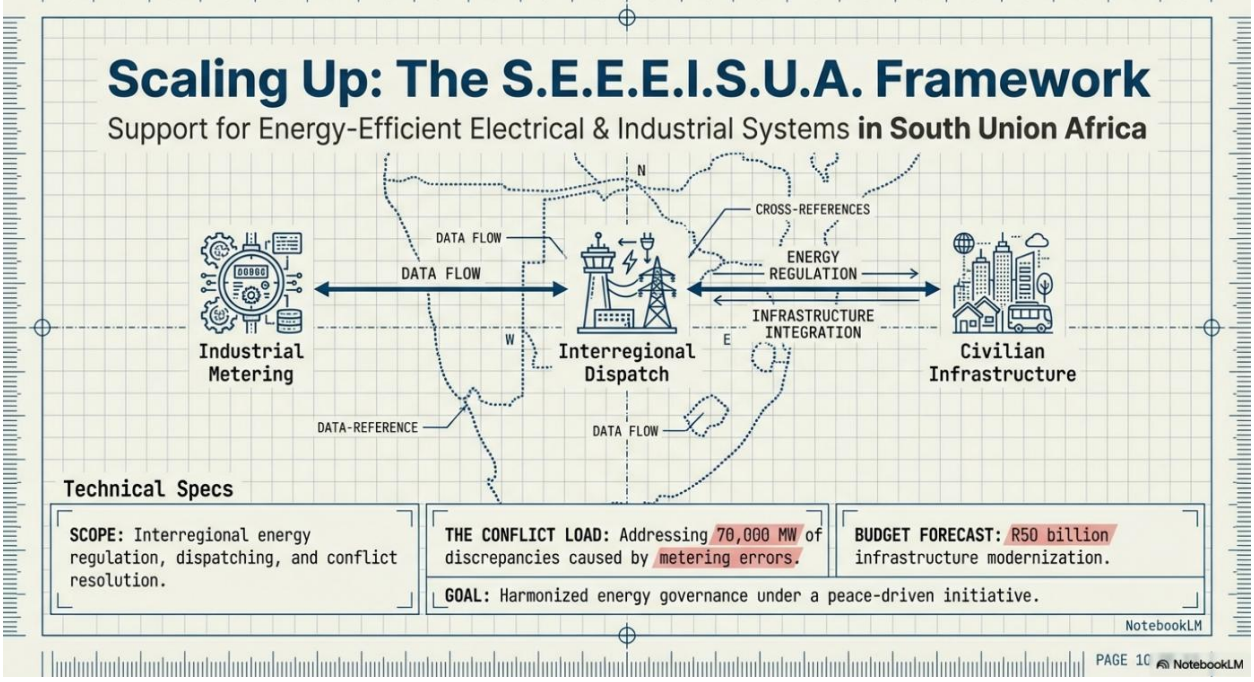


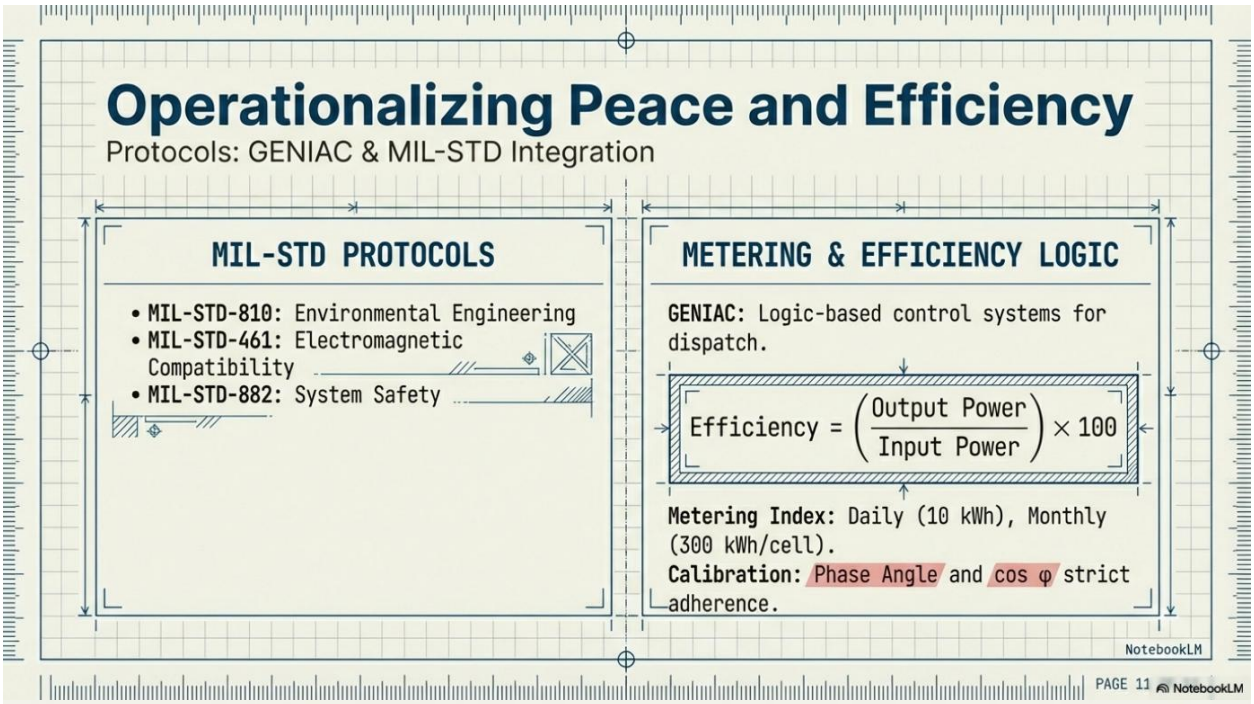
NotebookLM

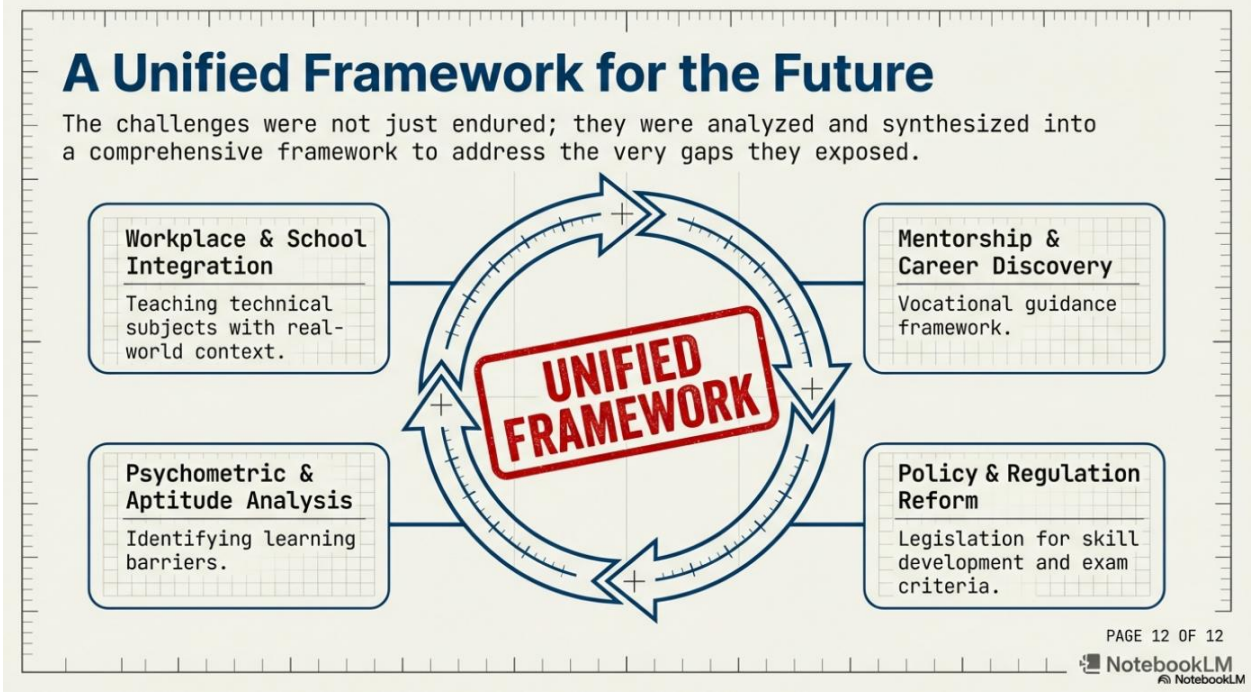

Portable, Verifiable, Audit-Grade Credentials
Stage 1
Data Aggregation
Stage 2
Credential Generation
Stage 3
Secure Issuance
Engine compiles validated metrics (VBA + Calculus outputs).
Generates export sheets for SAQA, AIU, ASIC, Elektor.
BlockMark Technologies Integration.
• Blockchain hash stamping
• NFT Digital Twin minting
• Cyber Essentials security
Eliminates "Portfolio Damage", administrative fraud, and manual verification errors.
NotebookLM
PAGE 07 OF 12
NotebookLM

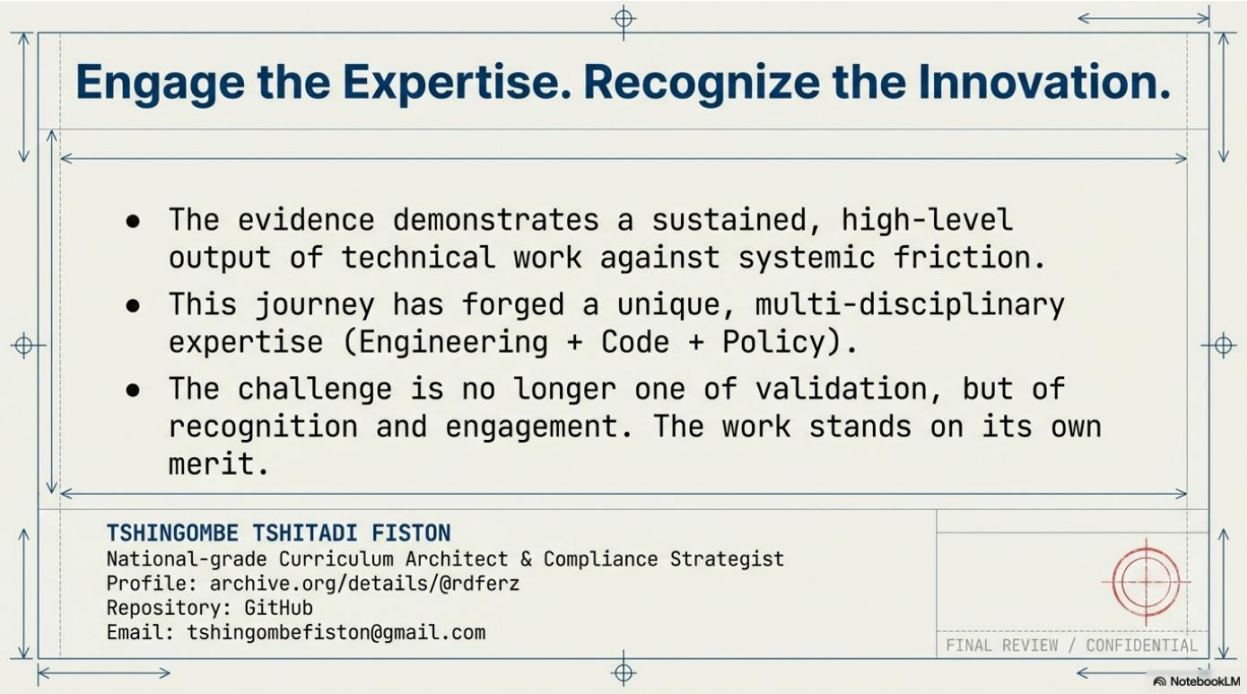

The Prototype: Forging Expertise Through Adversity
Profile: Tshingombe Tshitadi Fiston
SYSTEMS DECLINED
REJECTED
REJECTED
REJECTED
NSF I-Corps: Declined (Eligibility).
NRF Funding: Rejected.
Thesis Submissions: Rejected (Feb-Apr 2025).
INNOVATION ACCELERATED
Alison
F1000Research
Alison: 267 Courses, Top 6% Aptitude.
F1000Research: Career Discovery Mentoring.
GitHub: Codebase Development.
The official record of rejections tells only one side of the story.
While systems declined, innovation accelerated.
NotebookLM
PAGE 08 OF 12
NotebookLM


Multidisciplinary Expertise in Action
ENGINEERING
• Smart Grids & Rural Energy.
• Microgrid optimization.
• Kirchhoff's fault law analysis.
• Induction motor torque-speed characteristics.
PEDAGOGY
• Curriculum Design (Basic Equipment Maintenance).
• LMS Integration (Blackboard/Schoology).
• Experiential learning frameworks.
POLICY
• Regulatory Framework Analysis.
• SAQA/DHET/QCTO scope study.
• Resolution of 'Irregularity' notices.
• Proposal for Unified Framework.
NotebookLM
PAGE 09
NotebookLM


Scaling Up: The S.E.E.E.I.S.U.A. Framework
Support for Energy-Efficient Electrical & Industrial Systems in South Union Africa
N
W
E
DATA FLOW
DATA FLOW
CROSS-REFERENCES
ENERGY REGULATION
INFRASTRUCTURE INTEGRATION
DATA-REFERENCE
DATA FLOW
Industrial Metering
Interregional Dispatch
Civilian Infrastructure
Technical Specs
SCOPE: Interregional energy regulation, dispatching, and conflict resolution.
THE CONFLICT LOAD: Addressing 70,000 MW of discrepancies caused by metering errors.
BUDGET FORECAST: R50 billion infrastructure modernization.
GOAL: Harmonized energy governance under a peace-driven initiative.
NotebookLM
PAGE 10
NotebookLM


Operationalizing Peace and Efficiency
Protocols: GENIAC & MIL-STD Integration
MIL-STD PROTOCOLS
• MIL-STD-810: Environmental Engineering
• MIL-STD-461: Electromagnetic Compatibility
• MIL-STD-882: System Safety
METERING & EFFICIENCY LOGIC
GENIAC: Logic-based control systems for dispatch.
Efficiency = (Output Power / Input Power) × 100
Metering Index: Daily (10 kWh), Monthly (300 kWh/cell).
Calibration: Phase Angle and cos φ strict adherence.
NotebookLM
PAGE 11
NotebookLM


A Unified Framework for the Future
The challenges were not just endured; they were analyzed and synthesized into a comprehensive framework to address the very gaps they exposed.
Workplace & School Integration
Teaching technical subjects with real-world context.
Mentorship & Career Discovery
Vocational guidance framework.
UNIFIED FRAMEWORK
Psychometric & Aptitude Analysis
Identifying learning barriers.
Policy & Regulation Reform
Legislation for skill development and exam criteria.
PAGE 12 OF 12
NotebookLM
NotebookLM


Engage the Expertise. Recognize the Innovation.
The evidence demonstrates a sustained, high-level output of technical work against systemic friction.
This journey has forged a unique, multi-disciplinary expertise (Engineering + Code + Policy).
The challenge is no longer one of validation, but of recognition and engagement. The work stands on its own merit.
TSHINGOMBE TSHITADI FISTON
National-grade Curriculum Architect & Compliance Strategist
Profile: archive.org/details/@rdferz
Repository: GitHub
Email: tshingombefiston@gmail.com
FINAL REVIEW / CONFIDENTIAL
NotebookLM

The Unified Mastery Engine: A Blueprint for Verifiable Professional Expertise

The Professional Mastery System is an audit-grade "Engine" designed to track an individual's career development. It bridges the gap between theoretical knowledge and professional assets by integrating three Interconnected pillars: The Didactic Core, The Applied Engine, and the Credentialing & IP Hub.

Pillar 1: The Didactic Core

A library of modular curricula covering technical fields mapped to national qualification standards.

Pillar 2: The Applied Engine

Converts theory into measurable outcomes through project-based work, simulations, and quantitative analysis.

Pillar 3: The Credentialing & IP Hub

Finalizes achievement through blockchain-ready digital certificates and a structured path to patenting innovations.

Key Value Propositions

Audit-Grade Traceability

Provides a verifiable record from the initial lesson plan to the final professional credential.

Integrated Simulation Ecosystem

Connects directly with hardware/software platforms like UniTrain for hands-on, certified skill validation.

The Lifelong Ledger

A dynamic, permanent record of an individual's knowledge, skills, and innovative contributions.

Cost Structure for Issuing Verifiable Blockchain-Ready Certificates

Item	Price (Credits)	Paid By
Certificate with Expiry Date	£1 (100) per year	Issuer
Non-Expiring Certificate	£10 (1000)	Issuer
Hash Stamp on Blockchain	£1 (100)	Issuer

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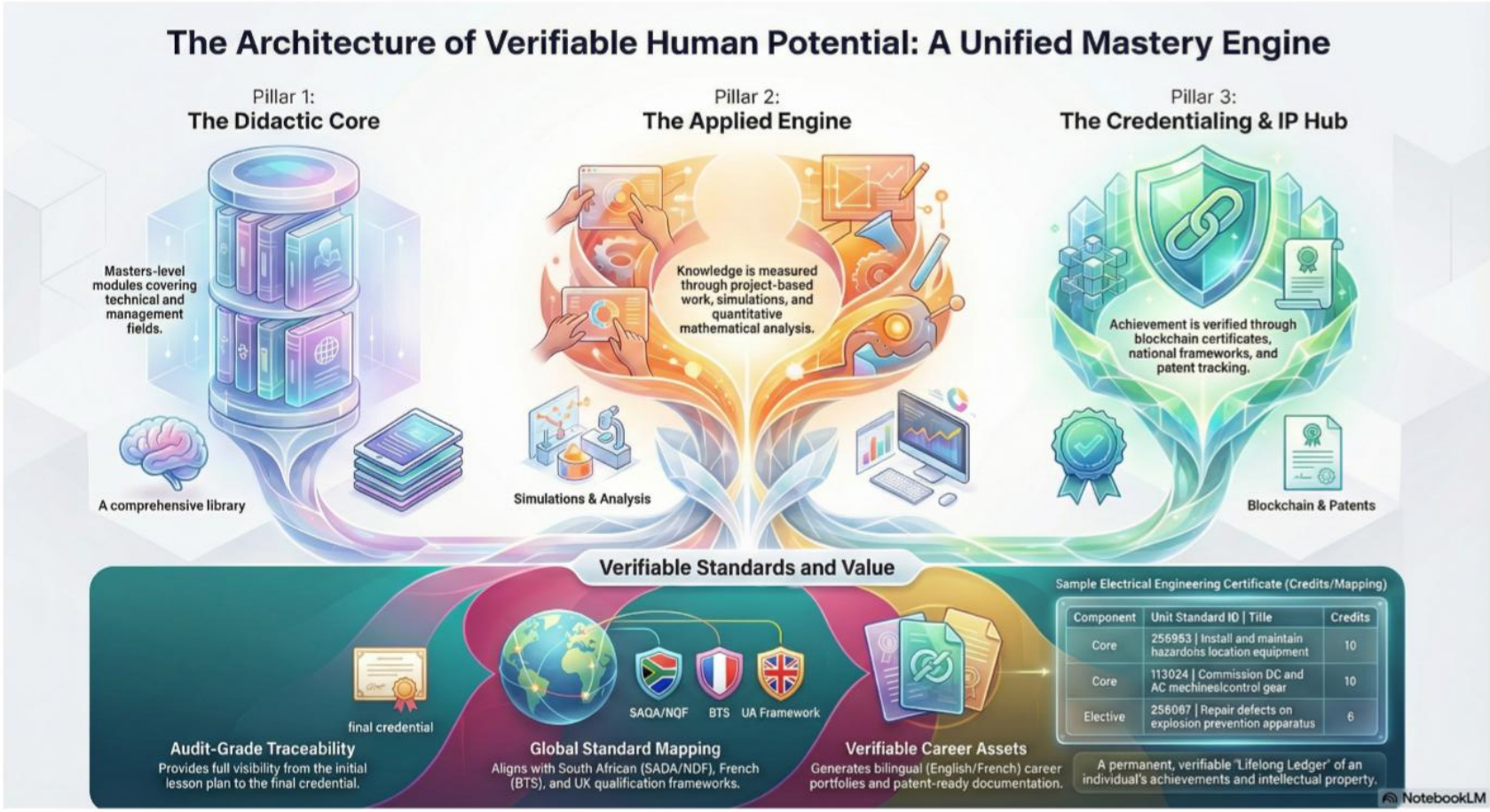
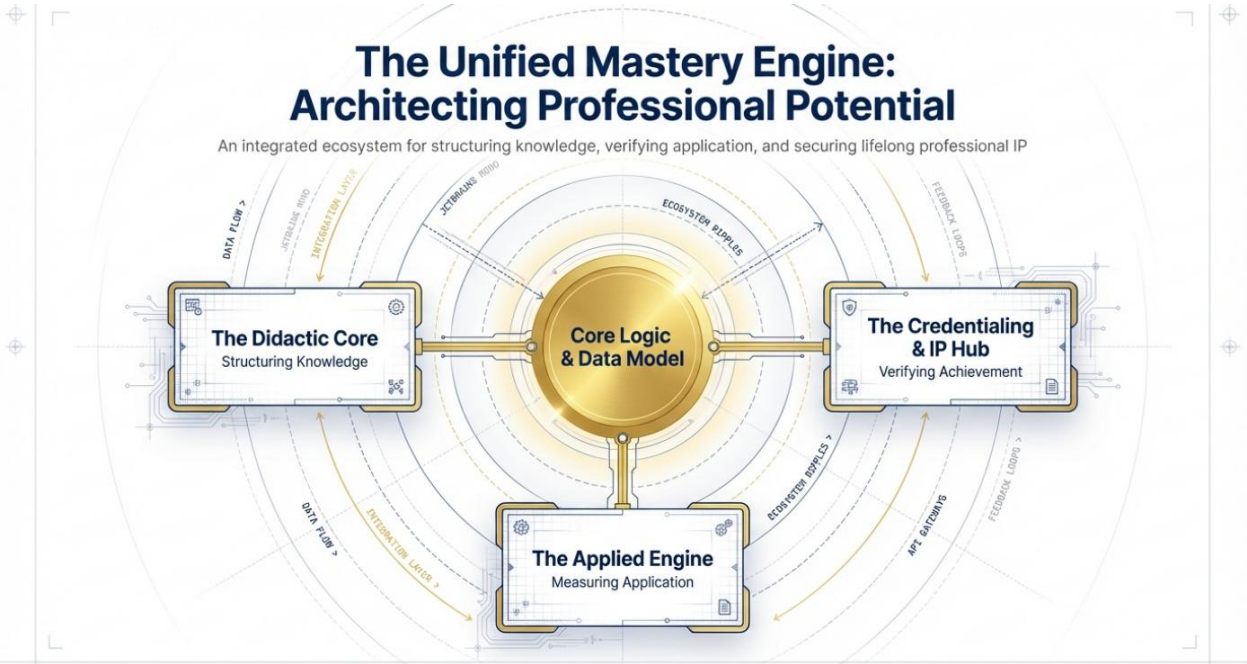
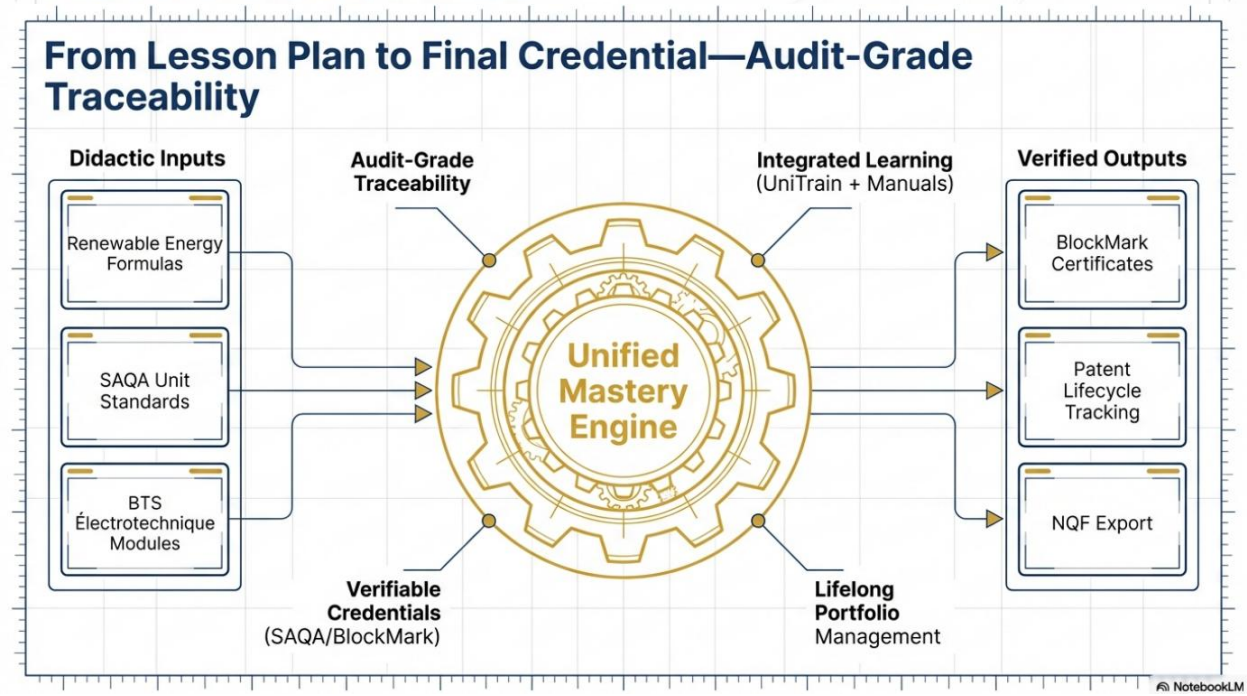
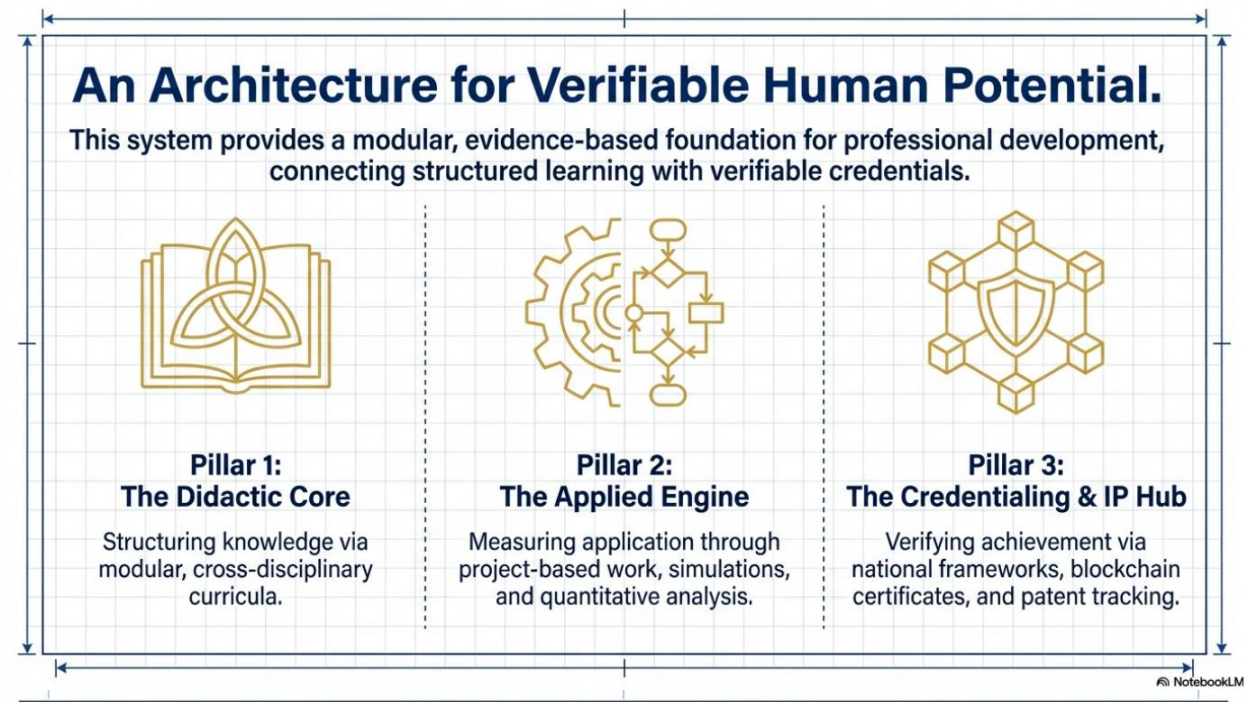
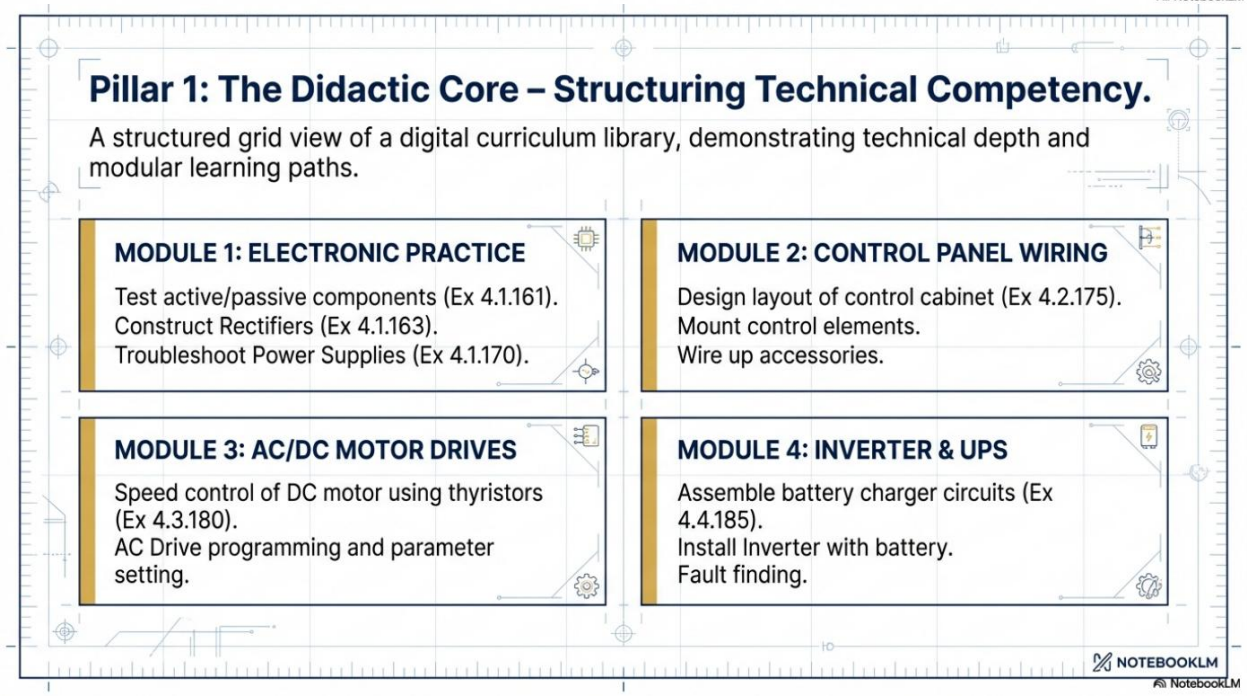
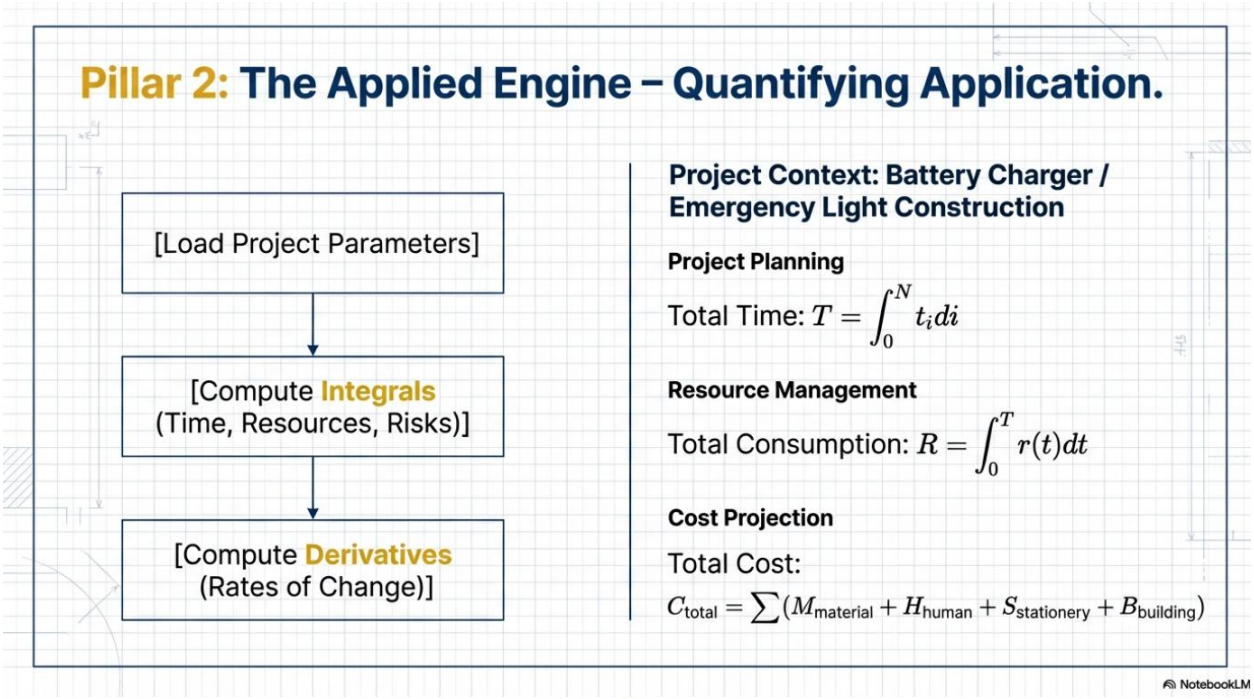

The Architecture of Verifiable Human Potential: A Unified Mastery Engine
Pillar 1:
The Didactic Core
Masters-level modules covering technical and management fields.
A comprehensive library
Pillar 2:
The Applied Engine
Knowledge is measured through project-based work, simulations, and quantitative mathematical analysis.
Simulations & Analysis
Pillar 3:
The Credentialing & IP Hub
Achievement is verified through blockchain certificates, national frameworks, and patent tracking.
Blockchain & Patents
Verifiable Standards and Value
final credential
Audit-Grade Traceability
Provides full visibility from the initial lesson plan to the final credential.
SAQA/NQF
BTS
UA Framework
Global Standard Mapping
Aligns with South African (SADA/NDF), French (BTS), and UK qualification frameworks.
Verifiable Career Assets
Generates bilingual (English/French) career portfolies and patent-ready documentation.
Sample Electrical Engineering Certificate (Credits/Mapping)
Component
Unit Standard ID | Title
Credits
Core
256953 | Install and maintain hazardons location equipment
10
Core
113024 | Commission DC and AC machineslcontrol gear
10
Elective
256067 | Repair defects on explosion prevention apparatus
6
A permanent, verifiable "Lifelong Ledger" of an individual's achievements and intellectual property.
NotebookLM

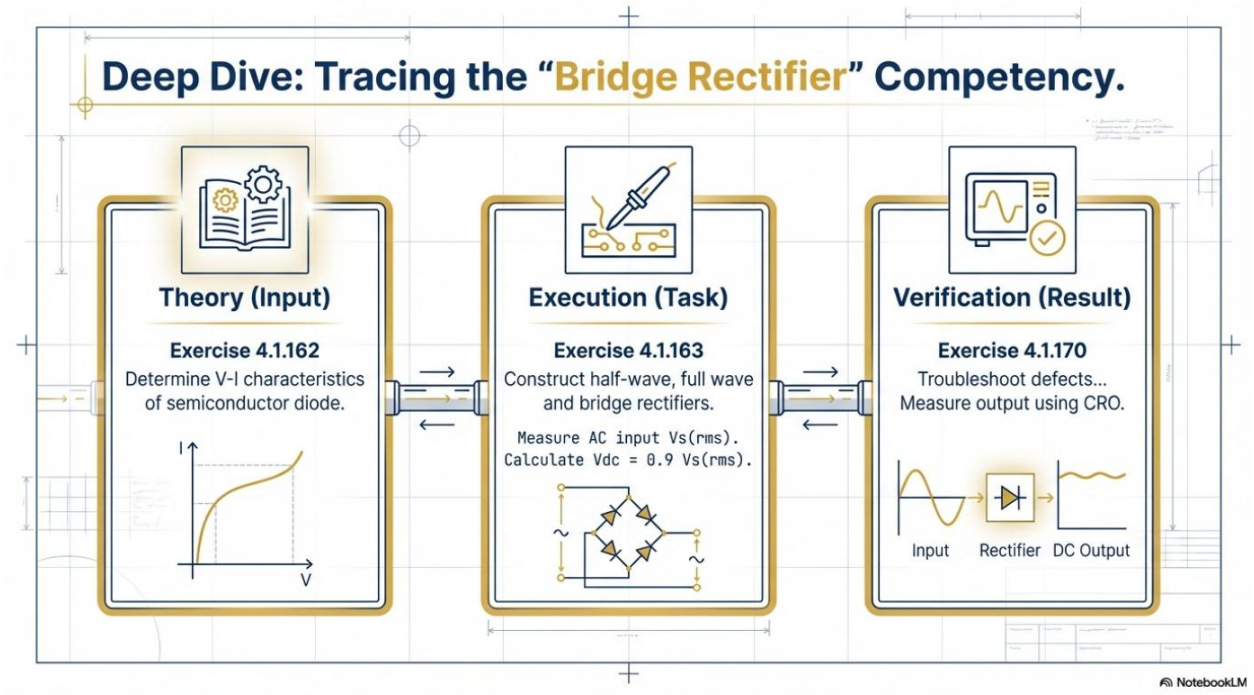

The Unified Mastery Engine:
Architecting Professional Potential
An integrated ecosystem for structuring knowledge, verifying application, and securing lifelong professional IP
The Didactic Core
Structuring Knowledge
Core Logic
& Data Model
The Credentialing
& IP Hub
Verifying Achievement
The Applied Engine
Measuring Application
SYSTEM DEFINITION: AUDIT-GRADE TRACKING // ENG-EDU-ENERGY-PUBLIC_SERVICE
NotebookLM


From Lesson Plan to Final Credential—Audit-Grade Traceability
Didactic Inputs
Renewable Energy Formulas
SAQA Unit Standards
BTS Électrotechnique Modules
Audit-Grade Traceability
Integrated Learning
(UniTrain + Manuals)
Unified Mastery Engine
Verifiable Credentials
(SAQA/BlockMark)
Lifelong Portfolio Management
Verified Outputs
BlockMark Certificates
Patent Lifecycle Tracking
NQF Export
NotebookLM


An Architecture for Verifiable Human Potential.
This system provides a modular, evidence-based foundation for professional development, connecting structured learning with verifiable credentials.
Pillar 1:
The Didactic Core
Structuring knowledge via modular, cross-disciplinary curricula.
Pillar 2:
The Applied Engine
Measuring application through project-based work, simulations, and quantitative analysis.
Pillar 3:
The Credentialing & IP Hub
Verifying achievement via national frameworks, blockchain certificates, and patent tracking.
NotebookLM


Pillar 1: The Didactic Core – Structuring Technical Competency.
A structured grid view of a digital curriculum library, demonstrating technical depth and modular learning paths.
MODULE 1: ELECTRONIC PRACTICE
Test active/passive components (Ex 4.1.161).
Construct Rectifiers (Ex 4.1.163).
Troubleshoot Power Supplies (Ex 4.1.170).
MODULE 2: CONTROL PANEL WIRING
Design layout of control cabinet (Ex 4.2.175).
Mount control elements.
Wire up accessories.
MODULE 3: AC/DC MOTOR DRIVES
Speed control of DC motor using thyristors (Ex 4.3.180).
AC Drive programming and parameter setting.
MODULE 4: INVERTER & UPS
Assemble battery charger circuits (Ex 4.4.185).
Install Inverter with battery.
Fault finding.
NOTEBOOKLM
NotebookLM


Pillar 2: The Applied Engine – Quantifying Application.
[Load Project Parameters]
[Compute Integrals (Time, Resources, Risks)]
[Compute Derivatives (Rates of Change)]
Project Context: Battery Charger / Emergency Light Construction
Project Planning
Total Time: $T = \int_0^N t_i di$
Resource Management
Total Consumption: $R = \int_0^T r(t) dt$
Cost Projection
Total Cost:
$C_{\text{total}} = \sum (M_{\text{material}} + H_{\text{human}} + S_{\text{stationery}} + B_{\text{building}})$
NotebookLM


Deep Dive: Tracing the "Bridge Rectifier" Competency.
Theory (Input)
Exercise 4.1.162
Determine V-I characteristics of semiconductor diode.
I
V
Execution (Task)
Exercise 4.1.163
Construct half-wave, full wave and bridge rectifiers.
Measure AC input Vs(rms).
Calculate Vdc = 0.9 Vs(rms).
Verification (Result)
Exercise 4.1.170
Troubleshoot defects...
Measure output using CRO.
Input
Rectifier
DC Output
NotebookLM

The Engine's Source Code: Verifiable Logic in Visual Basic

Connecting robust VBA automation to fundamental physics principles.

Module: RenewableEnergy.bas — JetBrains Mono

```
' Renewable Energy: Wind Harvest
Function WindEnergyHarvest(rho, A, v, eta, duration) As Double
    WindEnergyHarvest = 0.5 * rho * A * (v ^ 3) * eta * duration
End Function

' Estimate Total Project Cost
"Material: " & FormatCurrency(entry.MaterialCost)
```

Underlying Physics

Ohm's Law: $V = I \times R$

Power: $P = V \times I$

Ripple Factor: $\mathrm{Gamma} = \frac{V_{\mathrm{ac(rms)}}}{V_{\mathrm{dc}}}$

Wind Energy: $E = \int \left(\frac{1}{2}\rho A v^3 \eta\right) dt$

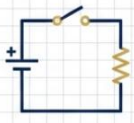
All calculations are based on established engineering principles.

Technical Blueprint meets Executive Dashboard

NotebookLM

Digital Twinning: Bridging Didactics and Practice

The UniTrain-I and InsTrain Simulation Environment: Connecting hands-on platforms for logged and certified practical skills.



DC Technology (Ex 4.1.161)

AC Technology

Three-Phase Motors (Ex 4.2.175)

Building Automation

UniTrain Simulation Tracker

```
' Module: UniTrainICredentialTracker
Type UniTrainTrainee
    Name As String
    CourseCode As String
    DC_Module As Boolean
    ThreePhase_Module As Boolean
    FaultsResolved As Integer ' Tracks fault simulation
    CertificationStatus As String
End Type
```

NotebookLM

Pillar 3: The Credentialing Hub – Mapping to National Standards

SAQA ID 63790: National Certificate: Electrical Engineering (NQF Level 3, 133 Credits)			
Type	Unit ID	**Title**	Credits
Core	258963	Install, test and maintain electrical equipment in a hazardous location	10
Core	113924	Install and commission DC and AC machines and control gear	10
Elective	259097	Carry out a detailed inspection and repair defects on explosion prevention apparatus	6

NotebookLM

International Interoperability: The French BTS Electrotechnics Standard.

Mapping professional activities and competencies between the French BTS standard and the system's certified English modules, ensuring global alignment and credentialing.

Professional Activities (France)	Mapped System Competency (English)
• Conception - étude détaillée du projet	• Design layout of control cabinet (Ex 4.2.175)
• Réalisation : installation – intégration	• Carryout wiring of control cabinet (Ex 4.2.176)
• Réaliser un diagnostic de performance	• Test the control panel for its performance (Ex 4.2.179)

954

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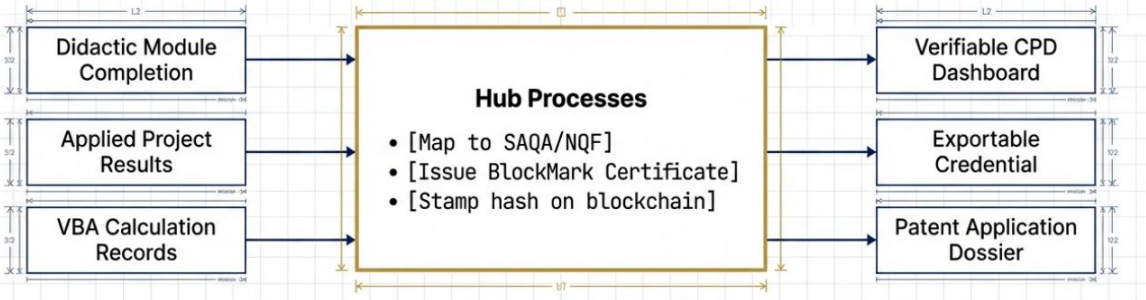
The Mechanics of Verification: Blockchain-Ready Credentials

The system integrates with third-party services like BlockMark Technologies to issue secure, verifiable digital certificates. This process supports both expiring (e.g., annual CPD) and non-expiring credentials, with options for premium blockchain features.



BlockMark Integration

Item	Price (credits)	Paid for by
Stamp a hash of an issued certificate on blockchain	£1 (100 credits)	Issuer

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From Research to Asset: A Structured Path to Patentability.

Beyond credentials, the hub manages the lifecycle of intellectual property. It aligns with international patent standards, tracking research methodology and assessing inventions against key criteria to create an audit-ready trail for patent applications.

Patentability Criteria

Novelty: Not publicly disclosed before filing.

Utility: Must function and serve a useful purpose (Verified by Ex 4.3.182).

Inventive Step: Not obvious to a skilled professional in the field.

VBA Logic for Patent Tracking

```
Type ResearchPatentProject
    ProjectID As String
    ScopeDefined As Boolean
    PatentNovelty As Boolean
    PatentUtility As Boolean
    PatentInventiveStep As Boolean
    PatentFiled As Boolean
End Type
```

Example Project: Universal Motor Speed Controller using SCR.

Reference: `URFIST Paris` patent tutorials and `Espacenet` database for prior art searches.

NotebookLM 955

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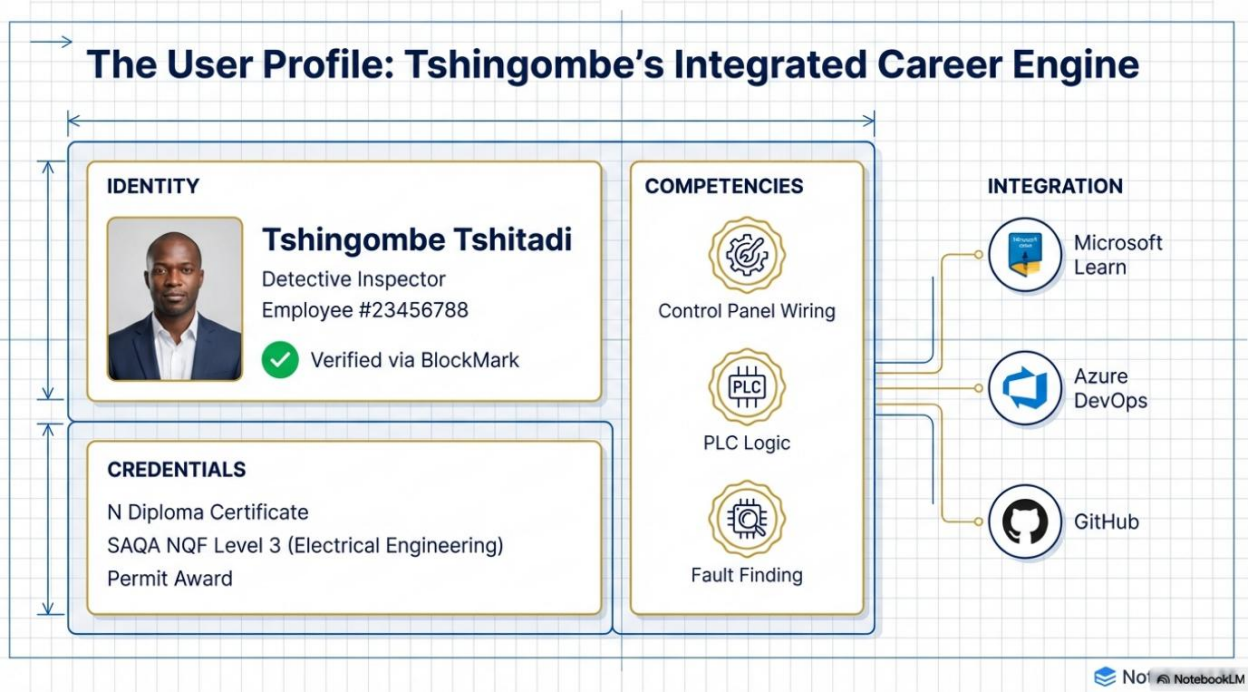
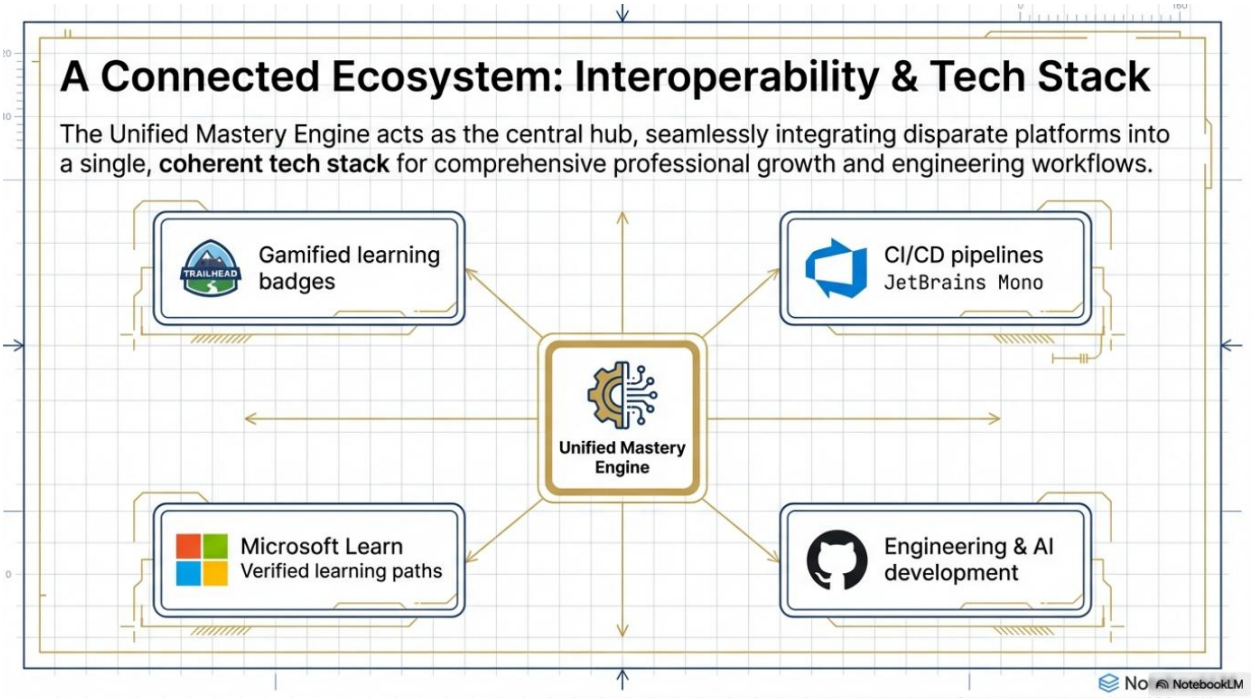
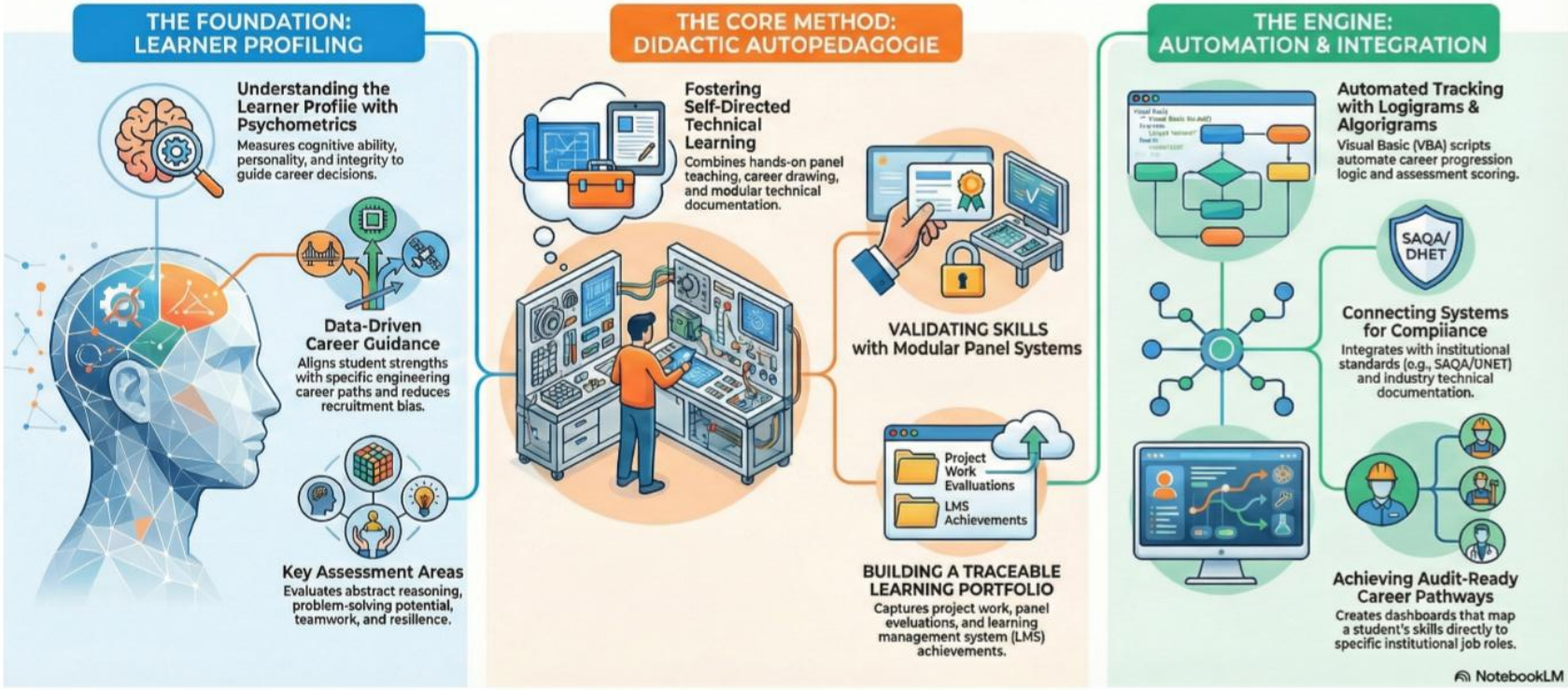

The User Profile: Tshingombe's Integrated Career Engine
IDENTITY
Tshingombe Tshitadi
Detective Inspector
Employee #23456788
Verified via BlockMark
CREDENTIALS
N Diploma Certificate
SAQA NQF Level 3 (Electrical Engineering)
Permit Award
COMPETENCIES
Control Panel Wiring
PLC
PLC Logic
Fault Finding
INTEGRATION
Microsoft Learn
Azure DevOps
GitHub

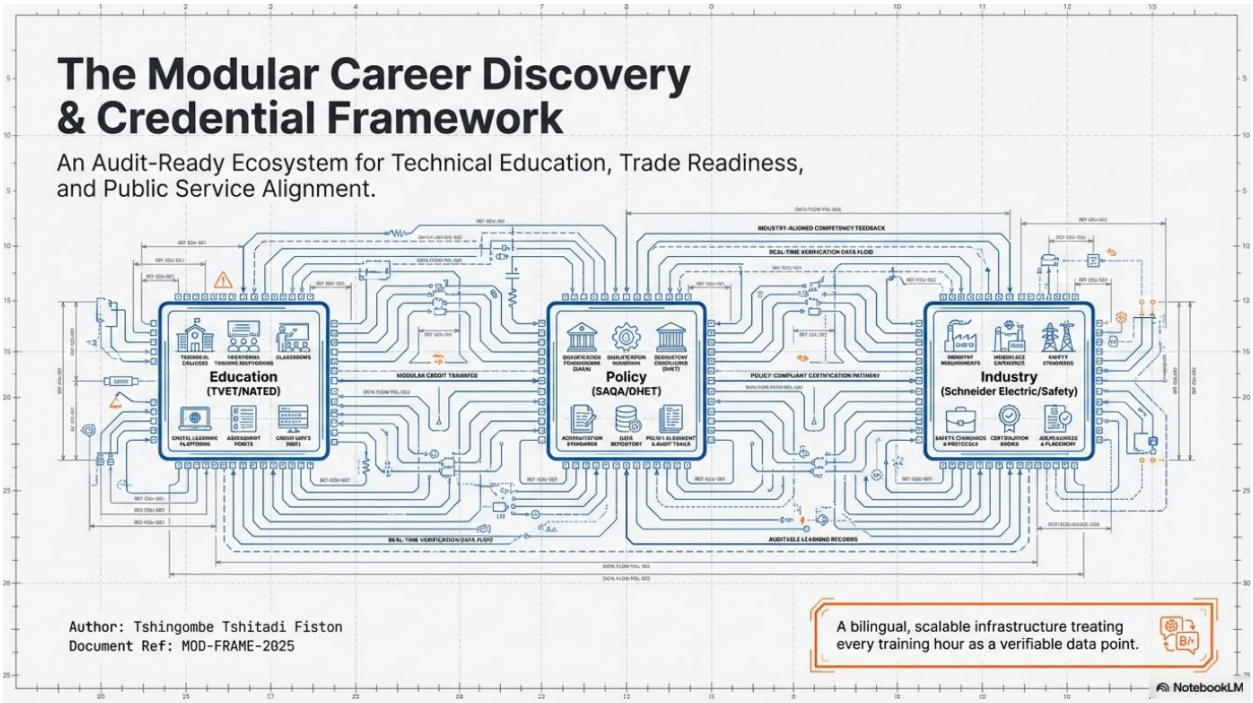

A Connected Ecosystem: Interoperability & Tech Stack
The Unified Mastery Engine acts as the central hub, seamlessly integrating disparate platforms into a single, coherent tech stack for comprehensive professional growth and engineering workflows.
Gamified learning badges
CI/CD pipelines
JetBrains Mono
Unified Mastery Engine
Microsoft Learn
Verified learning paths
Engineering & AI development

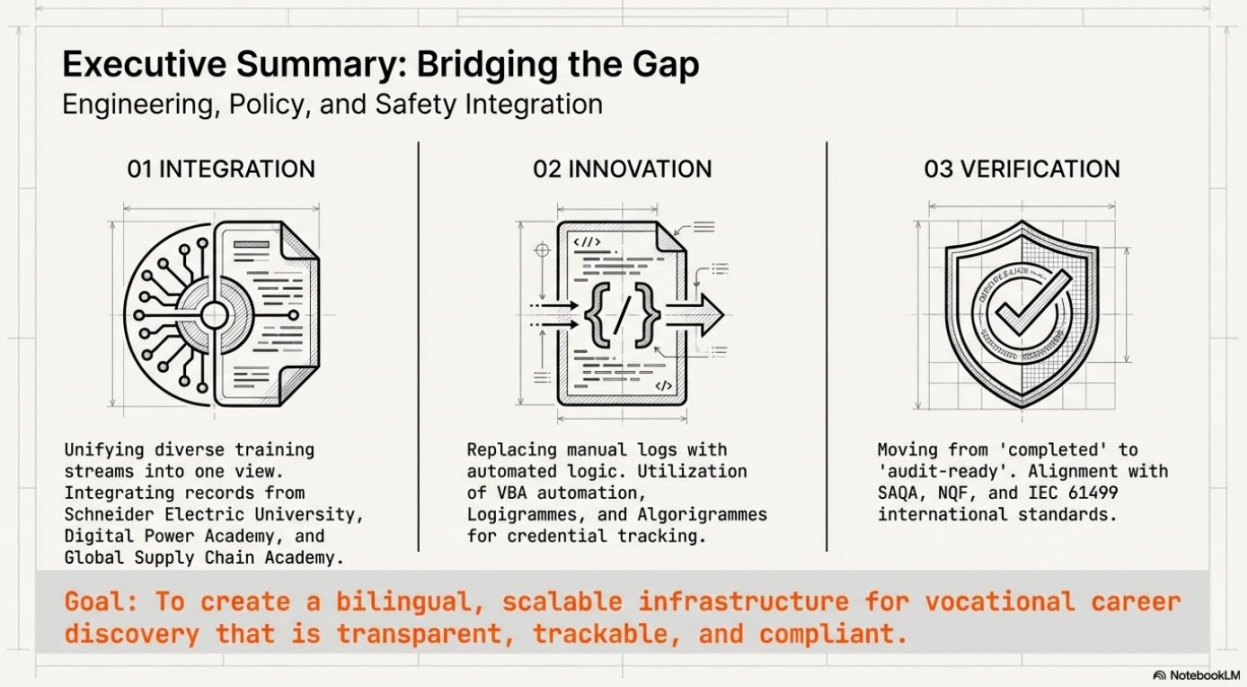
182 mm
The Professional's Lifelong Ledger
2 mm
2 mm
NQF
Level 3
JetBrains Mono
Project:
UniTrain
JetBrains Mono
Credential:
BlockMark
JetBrains Mono
Patent:
Filed
JetBrains Mono
Role:
Detective
Inspector
JetBrains Mono
Building the architecture for verifiable human potential.

A Blueprint for Engineering Career Readiness

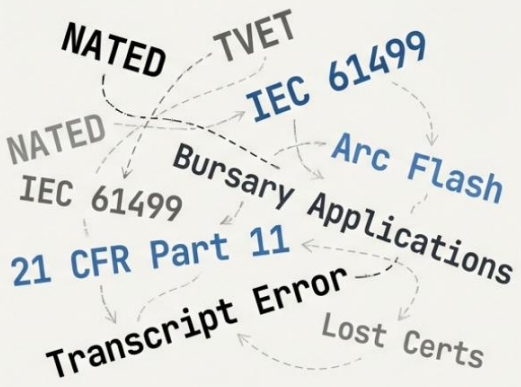
This framework **integrates self-directed learning (autopedagogie)**, psychometric profiling, and panel-based teaching for engineering studies. It uses Visual Basic automation (logigrams) to create a traceable, credential-linked system for career development and public service readiness.


THE FOUNDATION: LEARNER PROFILING
Understanding the Learner Profile with Psychometrics
Measures cognitive ability, personality, and integrity to guide career decisions.
Data-Driven Career Guidance
Aligns student strengths with specific engineering career paths and reduces recruitment bias.
Key Assessment Areas
Evaluates abstract reasoning, problem-solving potential, teamwork, and resilience.
THE CORE METHOD: DIDACTIC AUTOPEDAGOGIE
Fostering Self-Directed Technical Learning
Combines hands-on panel teaching, career drawing, and modular technical documentation.
VALIDATING SKILLS with Modular Panel Systems
Project Work Evaluations
LMS Achievements
BUILDING A TRACEABLE LEARNING PORTFOLIO
Captures project work, panel evaluations, and learning management system (LMS) achievements.
THE ENGINE: AUTOMATION & INTEGRATION
Automated Tracking with Logigrams & Algorigrams
Visual Basic (VBA) scripts automate career progression logic and assessment scoring.
SAQA/ DHET
Connecting Systems for Compliance
Integrates with institutional standards (e.g., SAQA/UNET) and industry technical documentation.
Achieving Audit-Ready Career Pathways
Creates dashboards that map a student's skills directly to specific institutional job roles.
NotebookLM


The Modular Career Discovery & Credential Framework
An Audit-Ready Ecosystem for Technical Education, Trade Readiness, and Public Service Alignment.
Education (TVET/NATED)
Policy (SAQA/QHET)
Industry (Schneider Electric/Safety)
Author: Tshingombe Tshitadi Fiston
Document Ref: MOD-FRAME-2025
A bilingual, scalable infrastructure treating every training hour as a verifiable data point.
NotebookLM


Executive Summary: Bridging the Gap
Engineering, Policy, and Safety Integration
01 INTEGRATION
Unifying diverse training streams into one view. Integrating records from Schneider Electric University, Digital Power Academy, and Global Supply Chain Academy.
02 INNOVATION
Replacing manual logs with automated logic. Utilization of VBA automation, Logigrammes, and Algorigrammes for credential tracking.
03 VERIFICATION
Moving from 'completed' to 'audit-ready'. Alignment with SAQA, NQF, and IEC 61499 international standards.
Goal: To create a bilingual, scalable infrastructure for vocational career discovery that is transparent, trackable, and compliant.
NotebookLM

The Challenge of Fragmented Vocational Data



1. **Disconnect**
   The gap between vocational training (TVET/NATED) and industry-specific certification (Schneider/Modicon).
2. **Auditability**
   Legacy systems lack 'Audit-Readiness.' Manual transcripts are prone to error and hard to verify against government bills.
3. **Policy Misalignment**
   Difficulty aligning international technical standards (like IEC 61499) with local South African policy (SAQA/NQF/DHET).

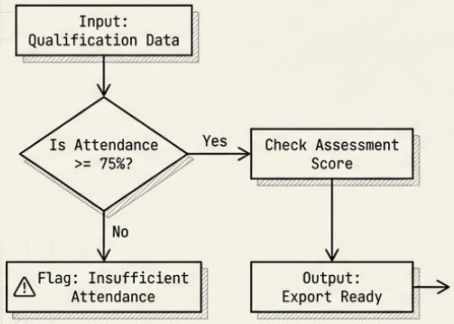
*"How can **policy irregularities** be resolved through technical documentation?"*
(Source: FBIP Concept Note)

NotebookLM

The Logic Engine: Logigrammes and Algorigrammes

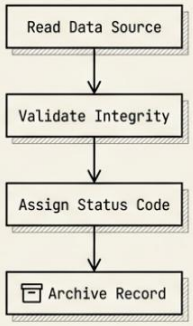
Transforming static training data into dynamic, actionable intelligence.

THE LOGIGRAMME (Decision Logic)



Decision-based flow logic for curriculum, attendance, and credential rules.

THE ALGORIGRAMME (Procedural Logic)



Step-by-step procedural logic for data validation and export workflows.

NotebookLM

Automation as Infrastructure

The `GenerateAuditSheet()` script automates compliance logs, tracking cost, status, and SAQA alignment instantly, eliminating manual administrative error.

```
Sub GenerateAuditSheet()
    Dim ws As Worksheet
    Set ws = ThisWorkbook.Sheets("AuditLog")

    ' Automated Cost & Amendment Tracking
    ws.Cells(2, 5).Formula = "=C2+D2"

    ' Real-time Status Indicators
    ws.Cells(2, 6).Value = "Pending Review"

    ' Algorithmic Archival Logic
    If exportStatus = "Eligible" Then
        Call ExportToArchive
    End If
End Sub
```

→ Automates cost calculations.

→ Instant status updates.

→ Automated archival logic.

NotebookLM

Proof of Concept: The Pilot Data Ecosystem

142 Total Active Modules	**12.2** Aggregate Training Hours
R0.00 Cost (Leveraging Open Access)	English, Portuguese, German, French, Spanish

1	Schneider Electric University	Domain: Energy Management
2	Digital Power Academy	Domain: Energy Management
3	Global Supply Chain Academy	Domain: EcoStruxure Panel Server
4	Digital Factory	Domain: Advanced Electrical Safety
		Domain: Modicon Switches

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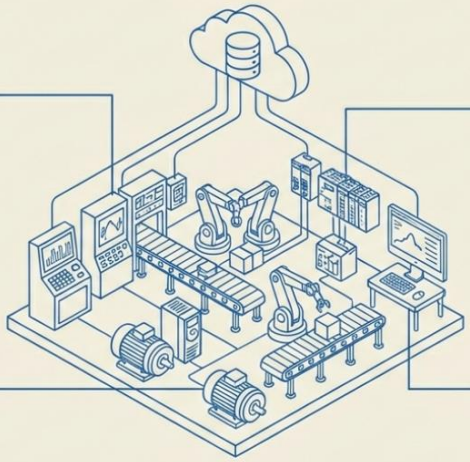
Domain Focus: Industrial Automation & Engineering

Core Standard:
IEC 61499
(Distributed
Control Systems)



Hardware:
Modicon Ethernet
Switches &
SpaceLogic
Controllers

Drives:
Altivar Machine
Professional
(ATV320, ATV340)

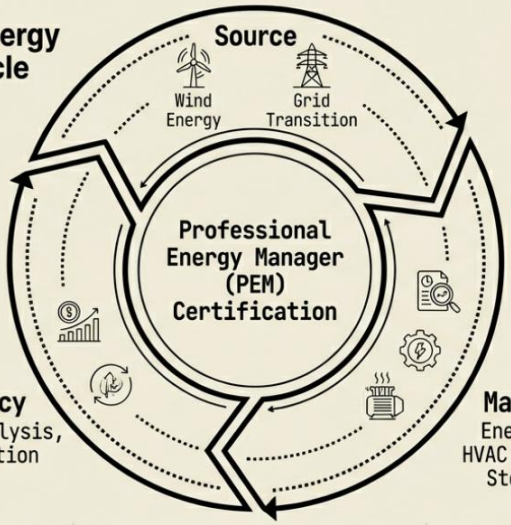
Software:
EcoStruxure
Automation Expert
& EBO 2024

Outcome: Mapping specific technical skills to **"Engineering Career Discovery"** and **Trade Test** eligibility.

NotebookLM

Domain Focus: Energy Management & Sustainability

The Energy Lifecycle



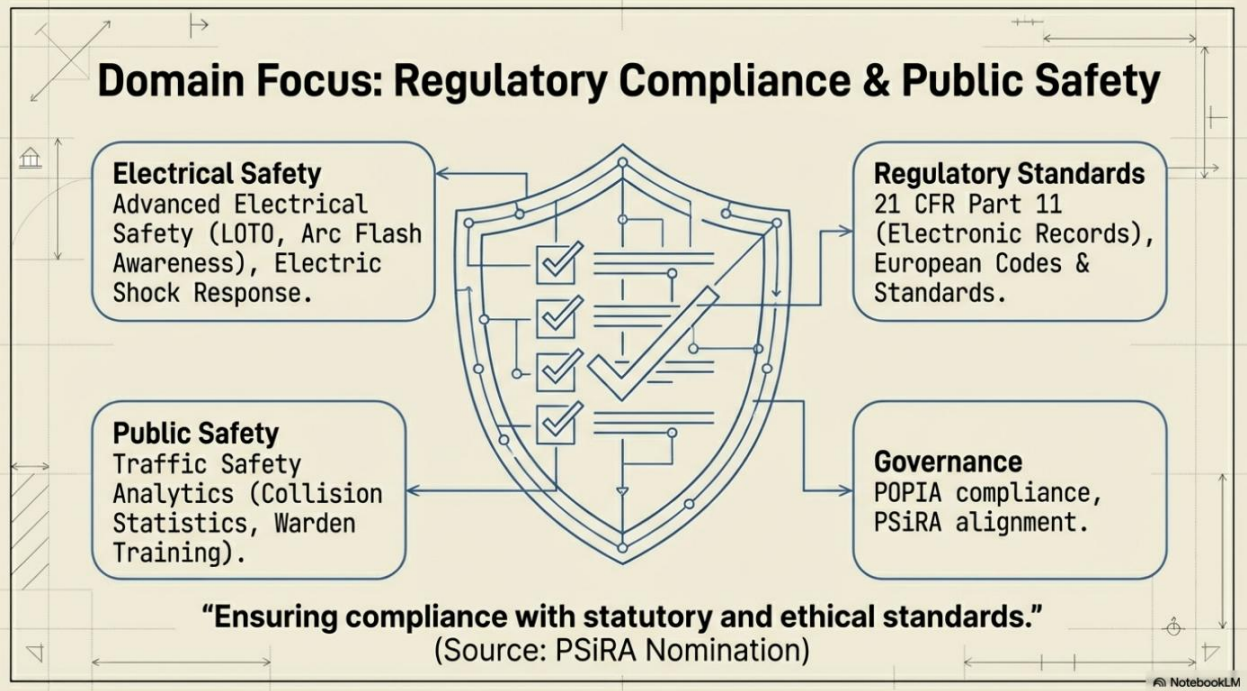
Curriculum Highlights

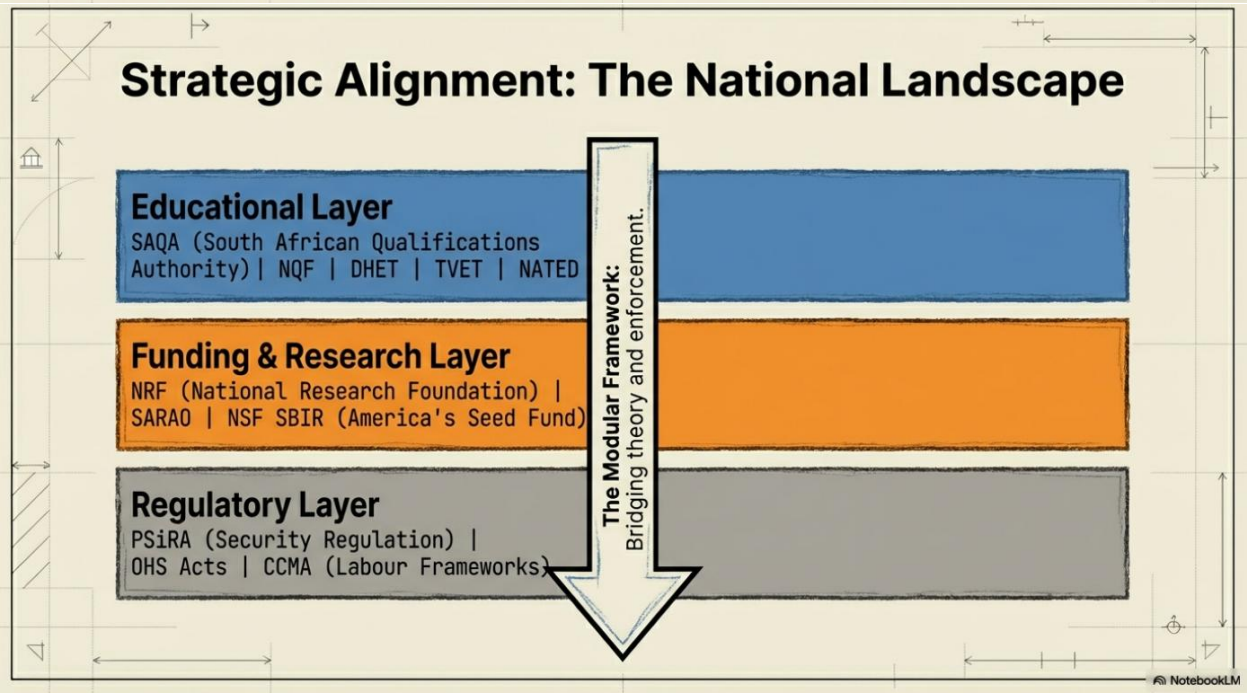
Total Modules:
91 / 68+ Hours

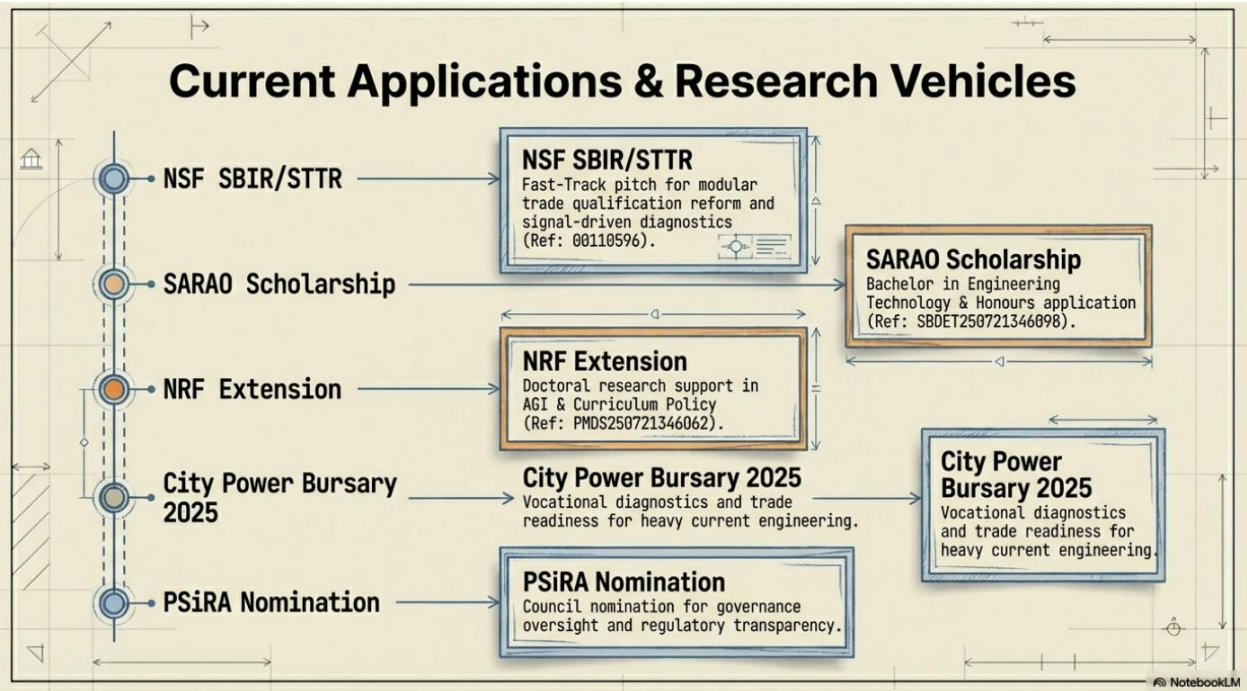
Key Topics: HVAC Optimization, Compressed Air Systems, Financial Analysis of Energy Projects.

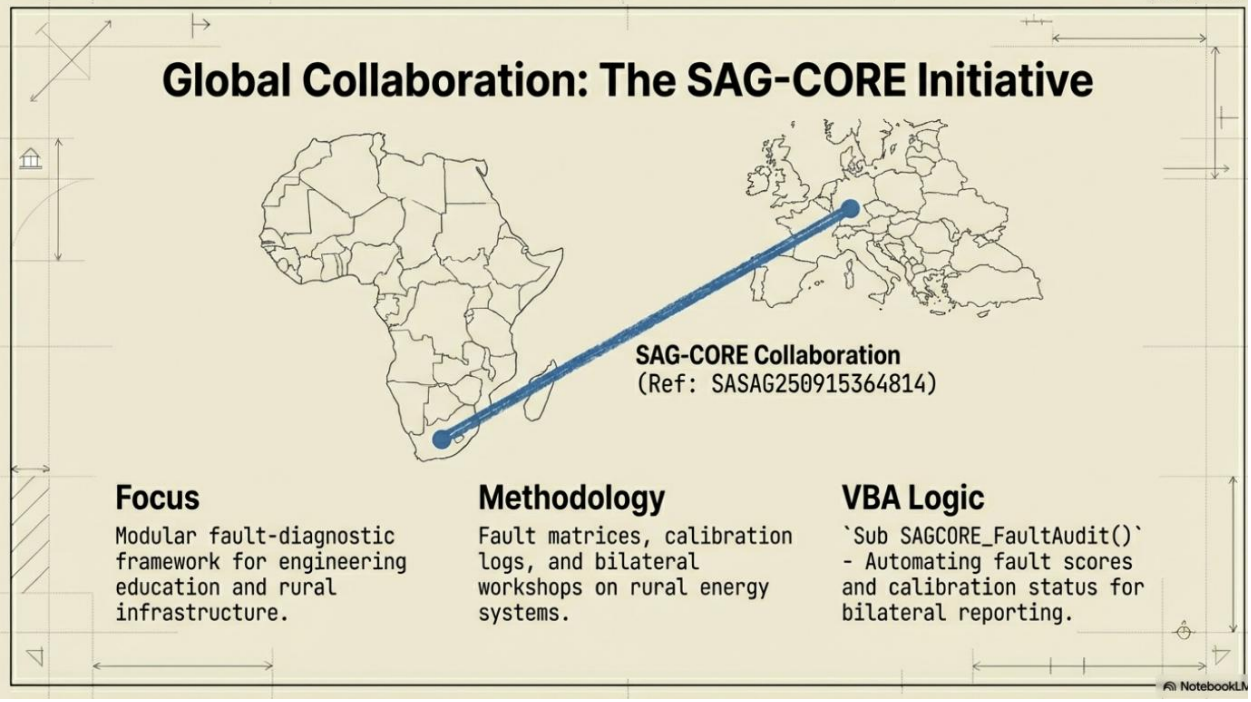
Framework Application:
Linking Energy Procurement to national infrastructure goals.

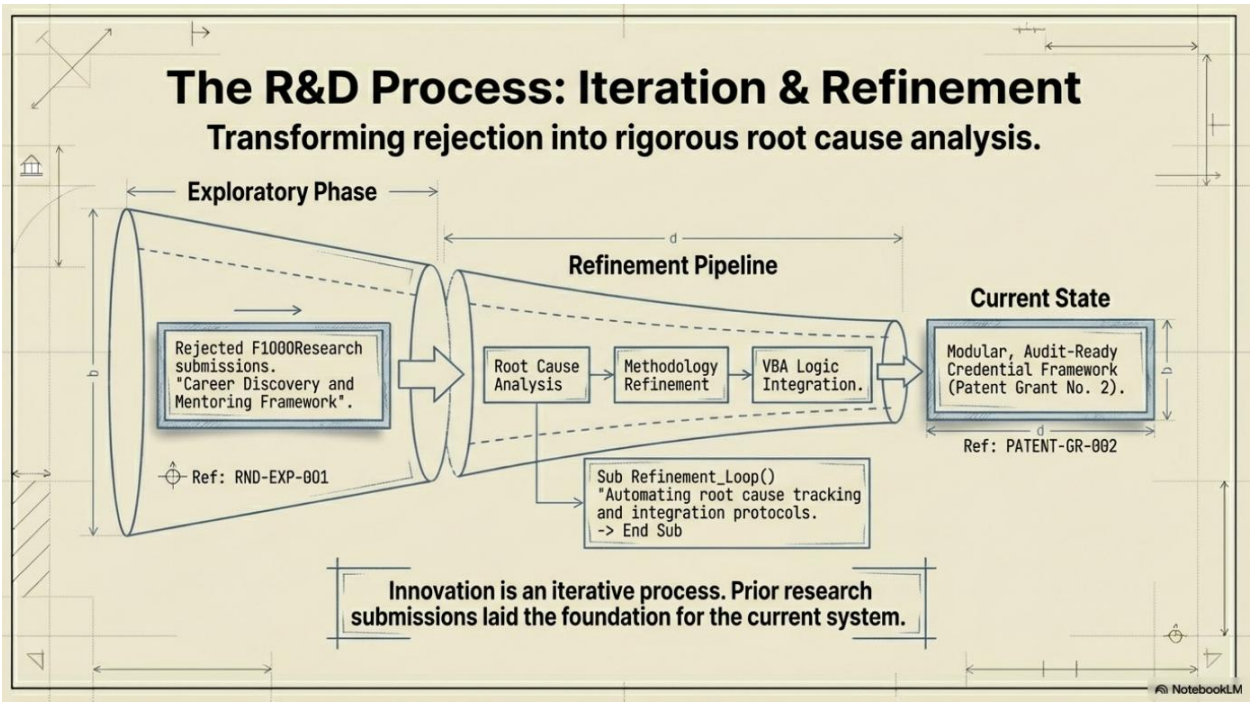
NotebookLM


Domain Focus: Regulatory Compliance & Public Safety
Electrical Safety
Advanced Electrical Safety (LOTO, Arc Flash Awareness), Electric Shock Response.
Regulatory Standards
21 CFR Part 11 (Electronic Records), European Codes & Standards.
Public Safety
Traffic Safety Analytics (Collision Statistics, Warden Training).
Governance
POPIA compliance, PSiRA alignment.
"Ensuring compliance with statutory and ethical standards."
(Source: PSiRA Nomination)
NotebookLM


Strategic Alignment: The National Landscape
Educational Layer
SAQA (South African Qualifications Authority) | NQF | DHET | TVET | NATED
Funding & Research Layer
NRF (National Research Foundation) | SARAO | NSF SBIR (America's Seed Fund)
Regulatory Layer
PSiRA (Security Regulation) | OHS Acts | CCMA (Labour Frameworks)
The Modular Framework:
Bridging theory and enforcement.
NotebookLM


Current Applications & Research Vehicles
NSF SBIR/STTR
SARAO Scholarship
NRF Extension
City Power Bursary 2025
PSiRA Nomination
NSF SBIR/STTR
Fast-Track pitch for modular trade qualification reform and signal-driven diagnostics (Ref: 00110596).
SARAO Scholarship
Bachelor in Engineering Technology & Honours application (Ref: SBDET250721346098).
NRF Extension
Doctoral research support in AGI & Curriculum Policy (Ref: PMDS250721346062).
City Power Bursary 2025
Vocational diagnostics and trade readiness for heavy current engineering.
City Power Bursary 2025
Vocational diagnostics and trade readiness for heavy current engineering.
PSiRA Nomination
Council nomination for governance oversight and regulatory transparency.
NotebookLM


Global Collaboration: The SAG-CORE Initiative
SAG-CORE Collaboration
(Ref: SASAG250915364814)
Focus
Modular fault-diagnostic framework for engineering education and rural infrastructure.
Methodology
Fault matrices, calibration logs, and bilateral workshops on rural energy systems.
VBA Logic
`Sub SAGCORE_FaultAudit()` - Automating fault scores and calibration status for bilateral reporting.
NotebookLM


The R&D Process: Iteration & Refinement
Transforming rejection into rigorous root cause analysis.
Exploratory Phase
Refinement Pipeline
Current State
Rejected F1000Research submissions. "Career Discovery and Mentoring Framework".
Root Cause Analysis
Methodology Refinement
VBA Logic Integration.
Modular, Audit-Ready Credential Framework (Patent Grant No. 2).
Ref: RND-EXP-001
Ref: PATENT-GR-002
Sub Refinement_Loop()
"Automating root cause tracking and integration protocols.
-> End Sub
Innovation is an iterative process. Prior research submissions laid the foundation for the current system.
NotebookLM

Future Roadmap & Implementation

Short Term	Completion of EBO 2024 & PEM Certification.
Medium Term	Pilot VBA Audit Tool in TVET context. Secure NRF/SARAO Funding.
Long Term	National Implementation of Career Discovery Framework across SA & DRC.

Goal: To democratize technical education through a transparent, automated, and bilingual infrastructure.

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Preserving Legacy, Building the Future

The Integrated System
JetBrains Mono

- **Validated:** 142+ Modules tracked and verified.
- **Automated:** VBA-driven compliance and cost tracking.
- **Aligned:** Mapped to SAQA, NQF, and International Standards.

Target details to state

"A visionary integration of engineering, labour policy, and credential transparency to scaffold a scalable, audit-ready infrastructure for Africa."

NotebookLM

A Modular Framework for Education & Credentialing

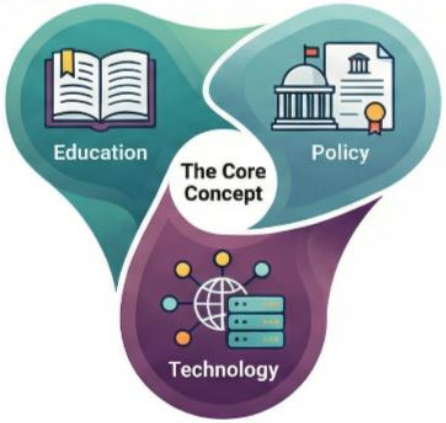
Modular and Scalable by Design

The framework is built for bilingual use and supports cross-border credentialing.

The Core Concept

Integrates Education, Policy, and Technology

Connects vocational training with IT systems and national qualification standards (SAQA/NQF).



The Technical Engine

The Dual-Logic Engine

Algorigramme

Step-by-step procedural logic for data validation and workflows.

Logigramme

Decision-based flow logic for curriculum and credential rules.

Automated Credential Audits via Visual Basic

VBA code automates eligibility checks for attendance, qualifications, and policy compliance.

Key Applications

Trade Test Preparation

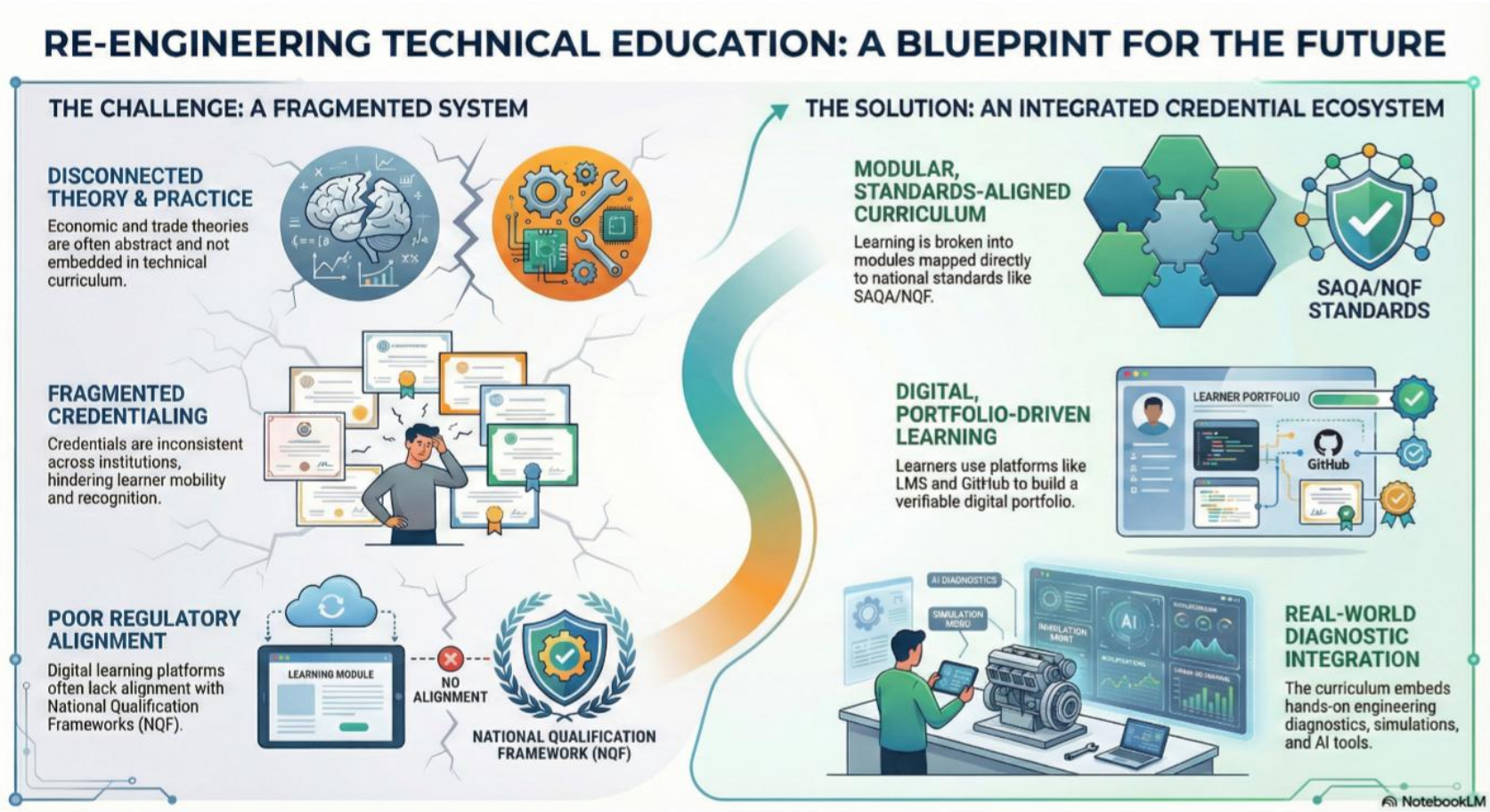
Digital Credential Tracking

Audit-Ready Documentation

Managed via Integrated Platforms

Utilizes common platforms like LMS, GitLab, and Archive.org for system management.

NotebookLM


RE-ENGINEERING TECHNICAL EDUCATION: A BLUEPRINT FOR THE FUTURE
THE CHALLENGE: A FRAGMENTED SYSTEM
DISCONNECTED THEORY & PRACTICE
Economic and trade theories are often abstract and not embedded in technical curriculum.
FRAGMENTED CREDENTIALING
Credentials are inconsistent across institutions, hindering learner mobility and recognition.
POOR REGULATORY ALIGNMENT
Digital learning platforms often lack alignment with National Qualification Frameworks (NQF).
LEARNING MODULE
NO ALIGNMENT
NATIONAL QUALIFICATION FRAMEWORK (NQF)
THE SOLUTION: AN INTEGRATED CREDENTIAL ECOSYSTEM
MODULAR, STANDARDS-ALIGNED CURRICULUM
Learning is broken into modules mapped directly to national standards like SAQA/NQF.
SAQA/NQF STANDARDS
DIGITAL, PORTFOLIO-DRIVEN LEARNING
Learners use platforms like LMS and GitHub to build a verifiable digital portfolio.
LEARNER PORTFOLIO
GitHub
AI DIAGNOSTICS
SIMULATION MODEL
AI
REAL-WORLD DIAGNOSTIC INTEGRATION
The curriculum embeds hands-on engineering diagnostics, simulations, and AI tools.
NotebookLM

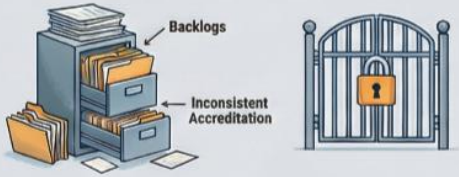
Architecture for Verifiable Human Potential: The Professional Mastery System
An integrated three-pillar system for structuring knowledge, measuring practical application, and verifying professional credentials.
THE DIDACTIC CORE
A comprehensive library of technical modules mapped to national qualifications and professional competencies.
THE APPLIED ENGINE
Translates didactic learning into measurable outcomes through project-based work, simulations, and quantitative analysis.
THE CREDENTIALING & IP HUB
Formalizes achievement through blockchain-ready certificates and formal intellectual property (patent) tracking.
CERTIFICATE
FOCUS MODULES
Renewable Energy
Wind Energy (Integral Calculations) & Photovoltaic Systems
Electrical Engineering
Installation in hazardous locations; DC/AC machine commissioning
Applied Technology
Spatial Computing, Genetic Engineering, and Building Automation
VERIFIABLE OUTCOMES & IMPACT
Lesson Plan
Final Credential
AUDIT-GRADE TRACEABILITY
Provides a continuous, verifiable path from the initial lesson plan to the final credential.
STANDARDS ALIGNMENT
Maps learning activities directly to frameworks like SAQA (NGF Level 3) and international technical standards.
KNOWLEDGE
SKILLS
INNOVATIVE CONTRIBUTIONS
LIFELONG PORTFOLIO MANAGEMENT
Creates a permanent "Lifelong Ledger" of an individual's knowledge, skills, and innovative contributions.
NotebookLM

The Career Engine: A Modular Blueprint for Verifiable Competence

THE CHALLENGE:
FRAGMENTED PROFESSIONAL IDENTITY

Static and Unverifiable Competence

The "Administrative Deadlock"

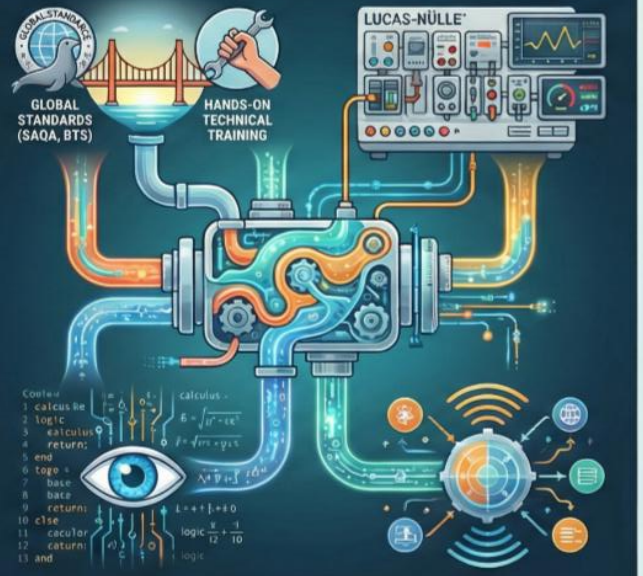


The Theoretical-Practical Gap

THE SOLUTION:
THE FOUR PILLARS OF THE CAREER ENGINE

Foundational & Applied Frameworks
Aligns global standards like SAQA (South Africa) and BTS (France) with hands-on technical training.

Real-World Diagnostic Mapping
Integrates modular learning systems for real-time fault simulation and diagnostics



The Unifying Digital Backbone
Uses VBA logic and calculus to automate performance tracking and credential verification

Integrated Data-Driven System
Bridges the gap between theoretical knowledge and industry relevant skills through automated, auditable tracking

THE RESULT:
AUDIT-GRADE PROFESSIONAL IDENTITY

Verifiable & Portable Credentials
Generates blockchain-stamped certificates and digital badges compatible with international bodies

Data-Driven Career Pathing
Providee evidence lockers and gap analysis to map individual skills to specialized industry roles

PURPOSE: Comparing current systemic failures against the Career Engine's proposed outcomes

Current Status (Fragmented)	Career Engine Outcome (Integrated)
Validation: Static, self-reported	**Validation:** Automated, data-driven, and auditable
Accreditation: Subject to backlogs and irregularities	**Accreditation:** Real-time, standards-aligned reporting
Industry Fit: Graduates lack job-ready skills	**Industry Fit:** Curriculum co-designed with industry partners

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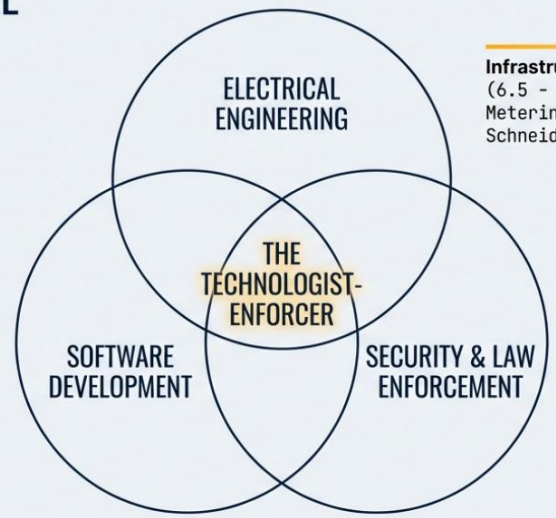
MULTIDISCIPLINARY ENGINEERING & SECURITY SYSTEMS PORTFOLIO

Integrating Electrical Infrastructure, Software Architecture, and Legal Compliance Frameworks

Professional Profile of Tshingombe Tshitadi Fiston | Senior Engineering & Assessment Officer

NotebookLM

EXECUTIVE PROFILE PROFILE & CORE COMPETENCIES



Infrastructure: PV Installation (6.5 - 250kW), Substation Metering, Schneider/Eaton Schneider/Eaton Protection.

Code: Full-stack VB.NET, SQL Database Management, Azure DevOps.

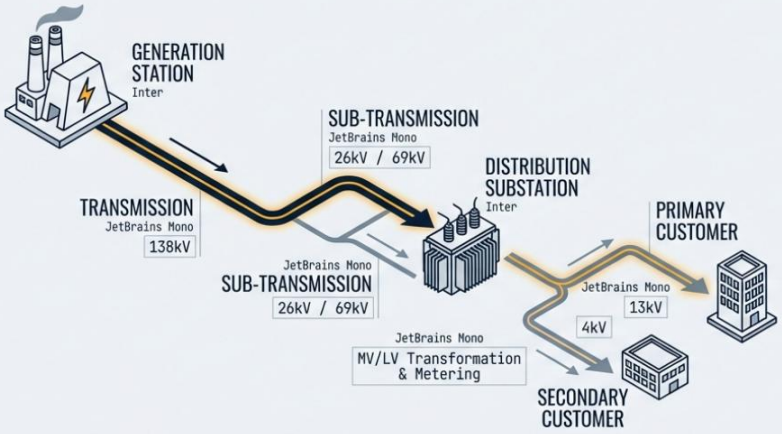
Compliance: Labour Law (CCMA/Labour Court), Domestic Violence Act 116, SAPS Recruitment Standards.

ROLES: Security Officer (Nogada/Section One) | Engineering Student (St Peace College) | Self-Represented Litigant

CERTIFICATIONS: NATED Engineering | Microsoft Security (Azure Defender) | PSIRA Grades

NotebookLM

ELECTRICAL GRID INFRASTRUCTURE & SUBSTATION DESIGN



PV INTEGRATION SPECS:

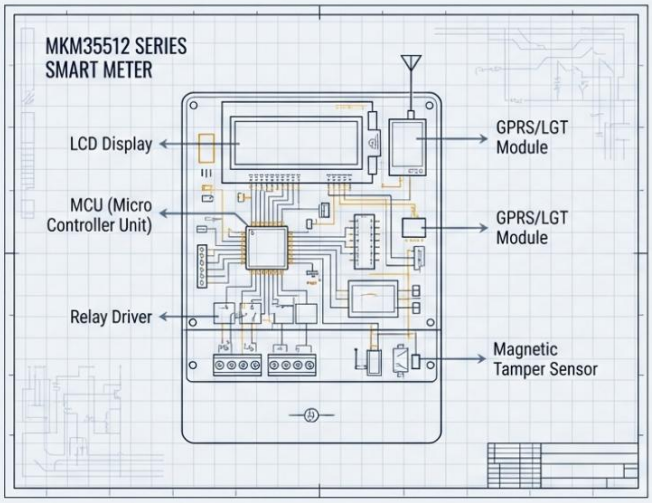
- Range: 6.5kW to 250kW Grid-Tied
- Inverter Configuration: DC/AC Conversion

SUBSTATION FUNCTIONS:

- Main Station Logic: Phase Protection
- Overcurrent & Disconnect Protocols
- Connection to Utility DB Network

NotebookLM

SMART METERING ARCHITECTURE & PLC COMMUNICATION



DEVICE PARAMETERS

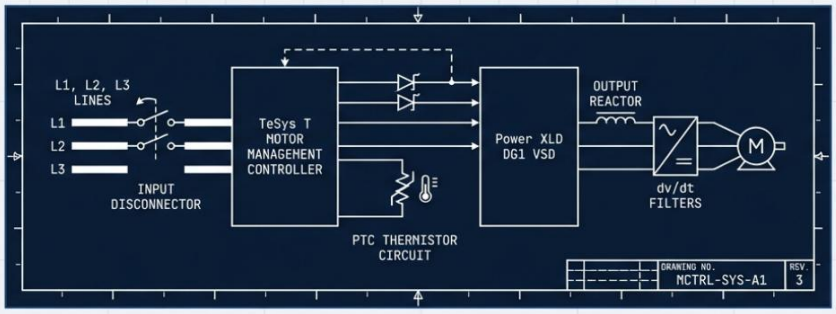
- Model: MKM35512 Three-Phase AC Static Watt-Hour
- Voltage: 240VAC (+20%) | Freq: 50Hz
- Current: 0-60A (Dynamic up to 72A)

PLC PROGRAMMING LOGIC

```
> PLC_IP: 10.126.224.221
> CMD: READ DATA FROM PLC
> ADDR: 5000000fff03ff000018000a04010000d×009S00B0B0B1
> STATUS: WRITE DATA TO PLC [OK]
```

NotebookLM

INDUSTRIAL MOTOR CONTROL & POWER MANAGEMENT



HARDWARE FOCUS:

- TeSys T Motor Management
- Safety Zones: Clearance/Hazard Categories
- Thermal & Short Circuit Protection

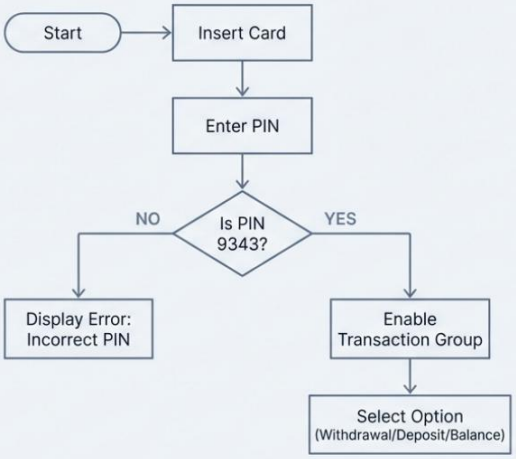
OPERATIONAL THEORY

Active Power: $P = \frac{1}{T} \int (u \cdot i)\, dt$

Reactive Energy: $\text{varh} = \int (u(t-90^\circ) \cdot i(t))\, dt$

NotebookLM

FINANCIAL SYSTEMS ARCHITECTURE (ATM PROTOTYPE)




```
Public Class Transaction_Box
    Const pin as Integer = 9343

    Private Sub Button1_Click()
        If pin_box.Text = "9343" Then
            Transaction_Group.Enabled = True
            Preview_Button.Enabled = True
        Else
            MessageBox.Show("Incorrect PIN", "Error")
        End If
    End Sub

    Private Function Deposit(ByRef amount As Decimal)
        Balance = amount
        Return Balance
    End Function
End Class
```

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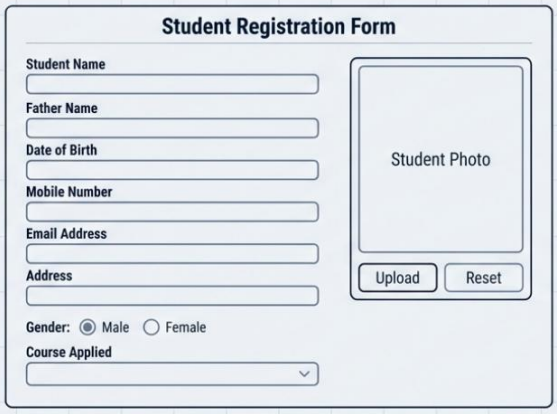
DATABASE MANAGEMENT & ADMINISTRATIVE AUTOMATION



Project: Automated Student Registration System (Excel VBA & SQL Integration)

```
If Trim(.txtStudentName.Value) = "" Then MsgBox "Enter Name"
```

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RESEARCH: WEB-BASED CRIME MANAGEMENT SYSTEMS

Modernizing Samara City Main Police Station Protocols

LEGACY SYSTEM

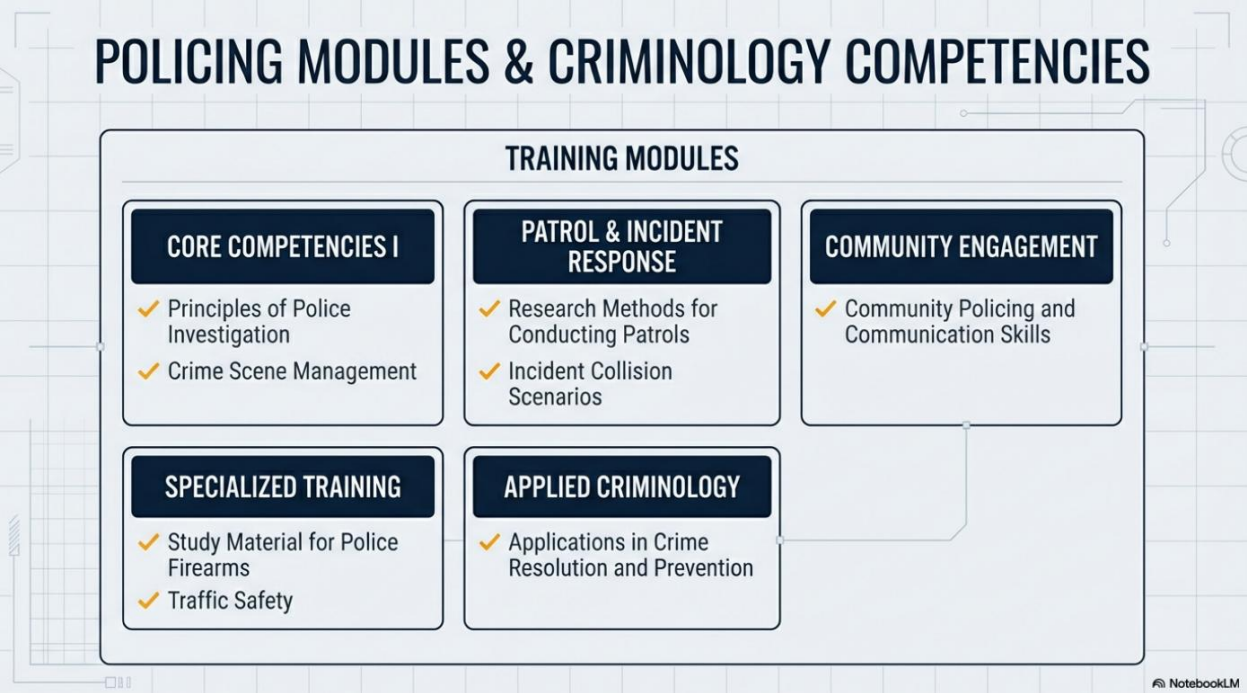
- Manual Dockets
- Hand-to-hand Transfer
- High Risk of Data Loss
- Slow Retrieval

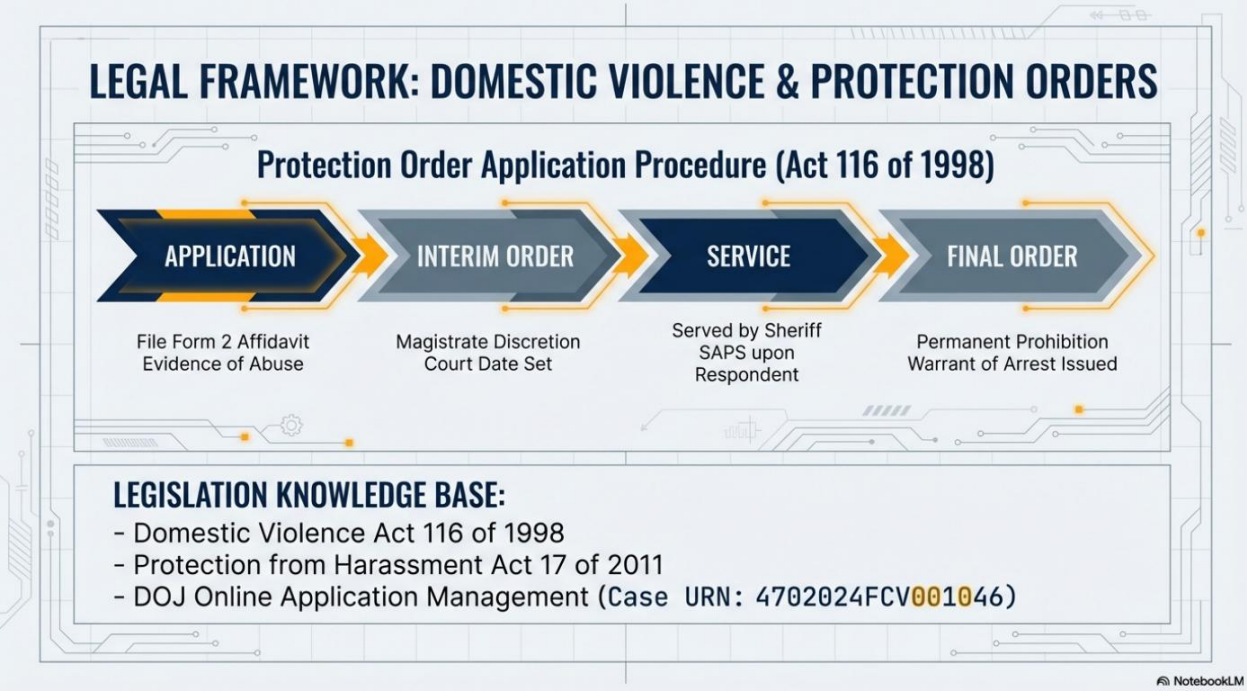
PROPOSED WEB SOLUTION

- Centralized **SQL Database**
- Online **Citizen Reporting**
- Instant **Criminal History Retrieval**
- Automated **Station Workflow**

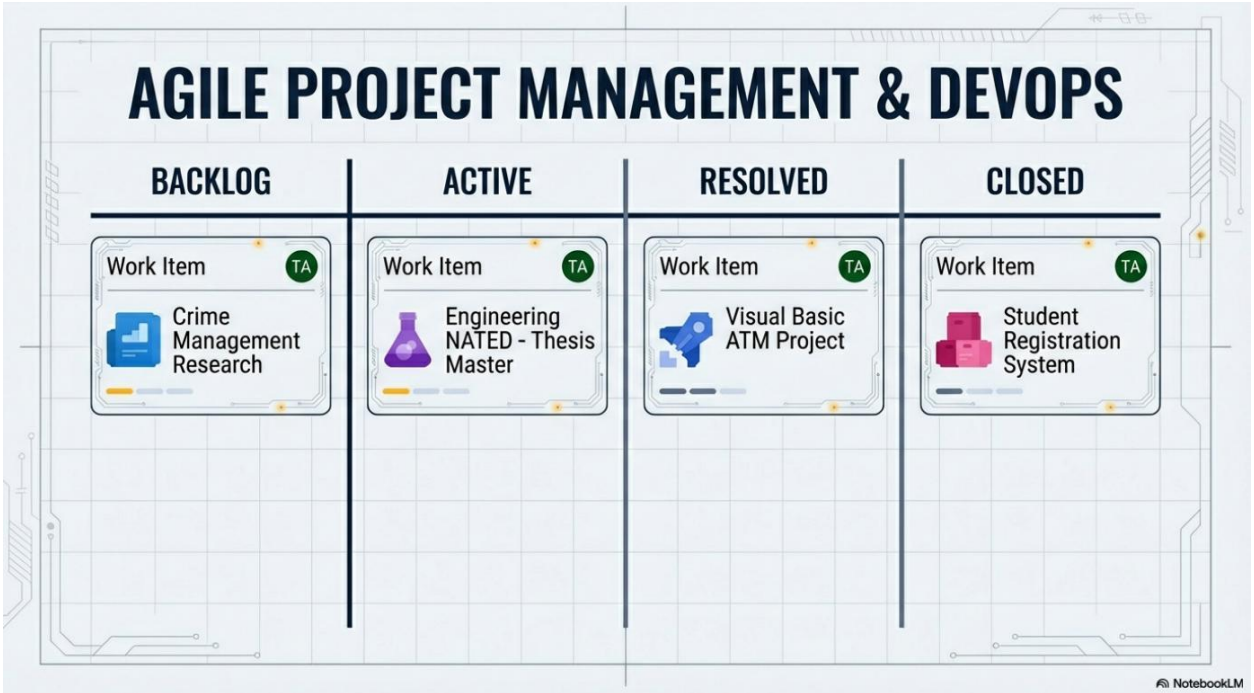
Based on preprint: "Web-Based Crime Management System" - Ettisa & Milkias

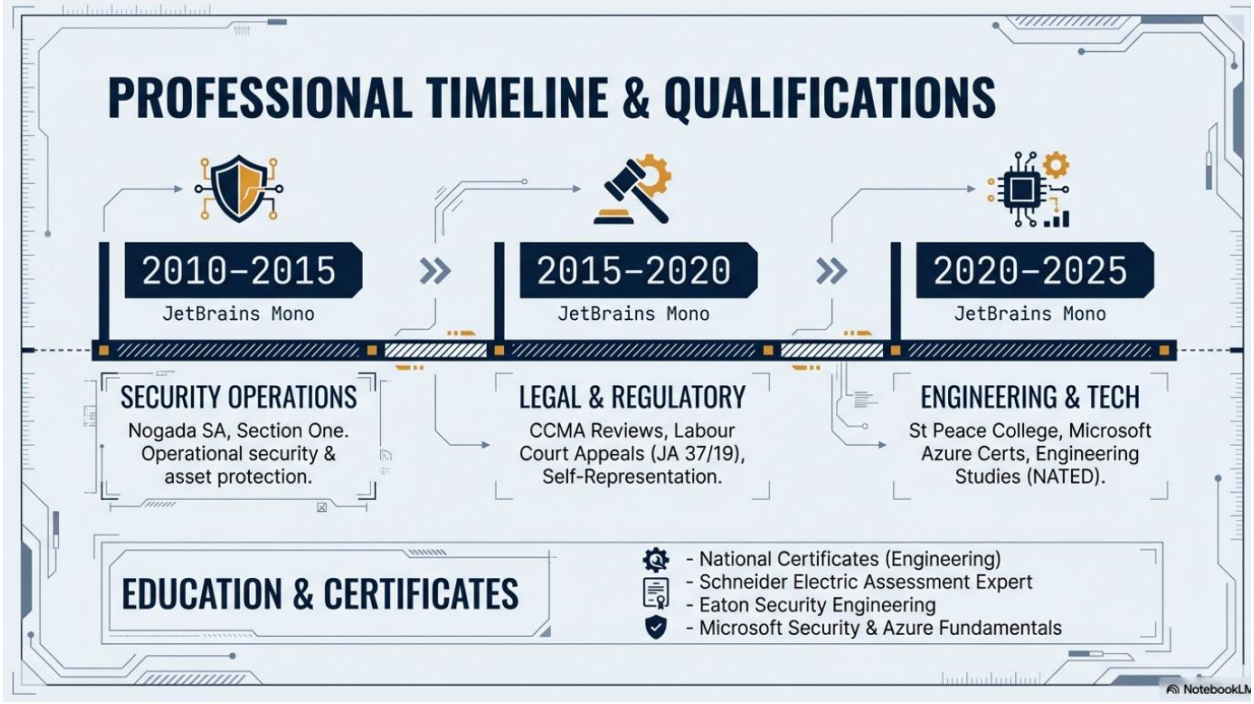
NotebookLM

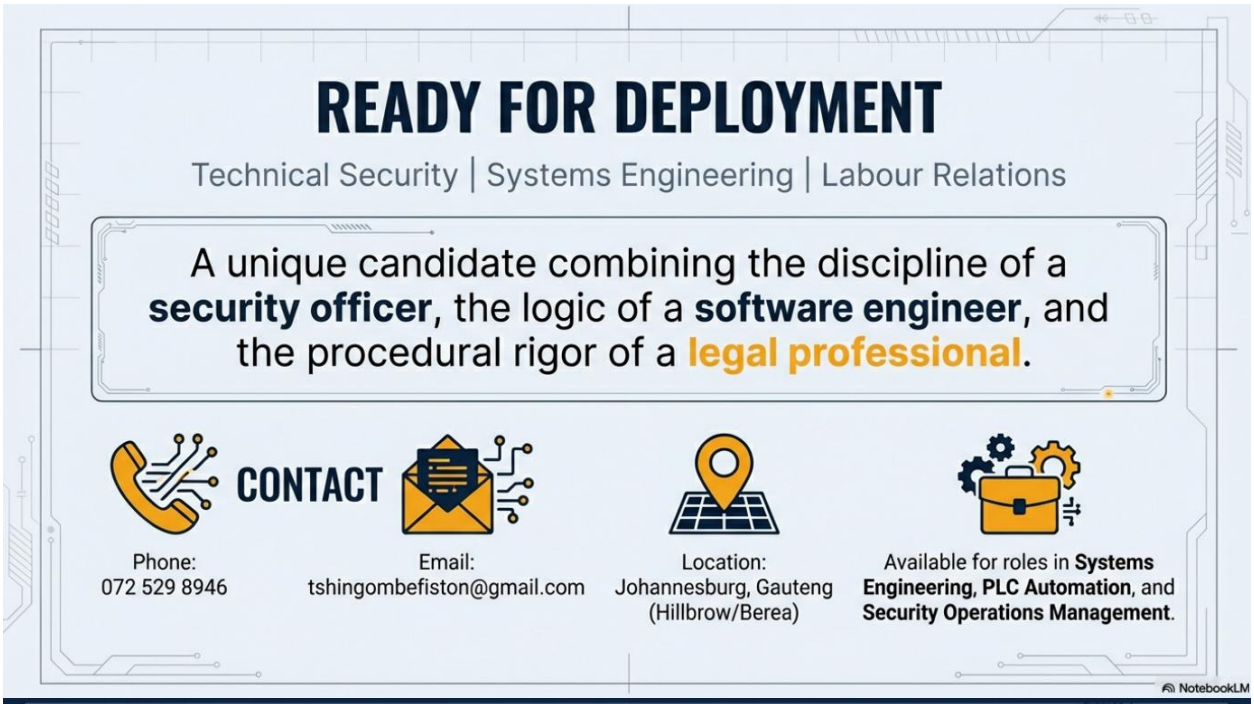

POLICING MODULES & CRIMINOLOGY COMPETENCIES
TRAINING MODULES
CORE COMPETENCIES I
Principles of Police Investigation
Crime Scene Management
PATROL & INCIDENT RESPONSE
Research Methods for Conducting Patrols
Incident Collision Scenarios
COMMUNITY ENGAGEMENT
Community Policing and Communication Skills
SPECIALIZED TRAINING
Study Material for Police Firearms
Traffic Safety
APPLIED CRIMINOLOGY
Applications in Crime Resolution and Prevention
NotebookLM

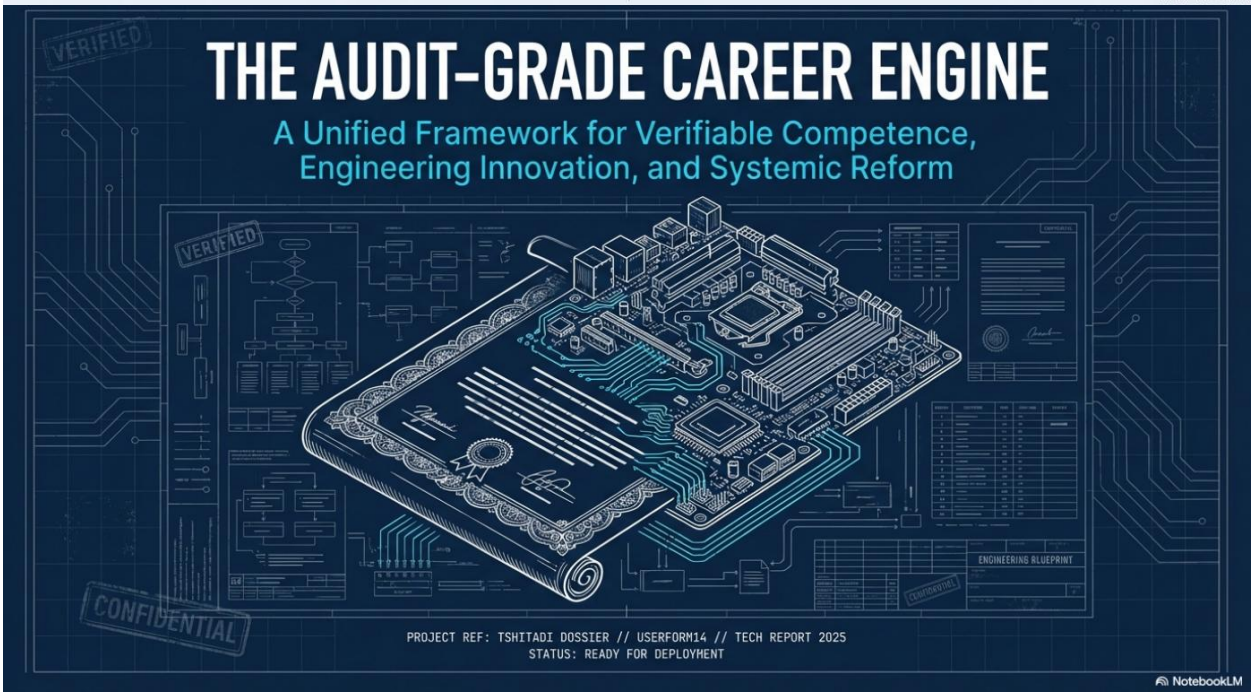

LEGAL FRAMEWORK: DOMESTIC VIOLENCE & PROTECTION ORDERS
Protection Order Application Procedure (Act 116 of 1998)
APPLICATION
File Form 2 Affidavit
Evidence of Abuse
INTERIM ORDER
Magistrate Discretion
Court Date Set
SERVICE
Served by Sheriff
SAPS upon
Respondent
FINAL ORDER
Permanent Prohibition
Warrant of Arrest Issued
LEGISLATION KNOWLEDGE BASE:
- Domestic Violence Act 116 of 1998
- Protection from Harassment Act 17 of 2011
- DOJ Online Application Management (Case URN: 4702024FCV001046)
NotebookLM

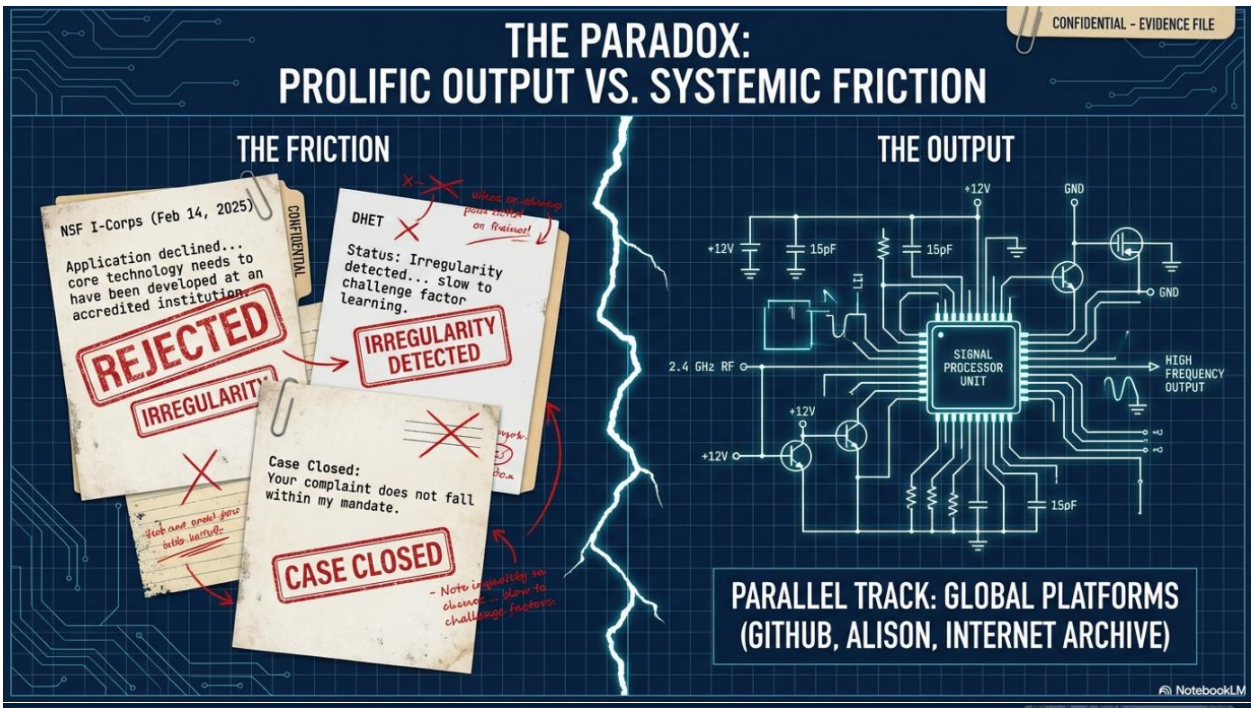
LABOUR LAW LITIGATION & INSTITUTIONAL PROCEDURES
IN THE HIGH COURT OF SOUTH AFRICA
Appeal Case Number: JA 37/19 | JR 2461/15
Parties: Tshingombe Tshitadi Fiston (Appellant) vs. Nogada SA & CCMA (Respondent)
DOCUMENTATION DRAFTING
Notice of Motion
Heads of Argument
Petitions for Leave to Appeal
REGULATORY BODIES
Department of Justice (DOJ)
Department of Labour
CCMA & Bargaining Councils (NBCPSS)
PROCEDURAL KNOWLEDGE
Rule 7A Review Applications
Rescission Rulings
Labour Appeal Court Processes
NotebookLM
PRIVATE SECURITY REGULATORY AUTHORITY (PSIRA) COMPLIANCE
COMPLIANCE AUDIT CHECKLIST
PSIRA Grade Registration
National Bargaining Council (NBCPSS) Agreements
Provident Fund & Levy Management
Dispute Resolution (Unfair Dismissal/Underpayment)
OPERATIONAL EXPERIENCE
Roles: Security Officer (2010–2017)
Companies: Nogada SA, Section One
Scope: Access Control, Asset Protection (Mining/Retail), Industrial Relations.
NotebookLM

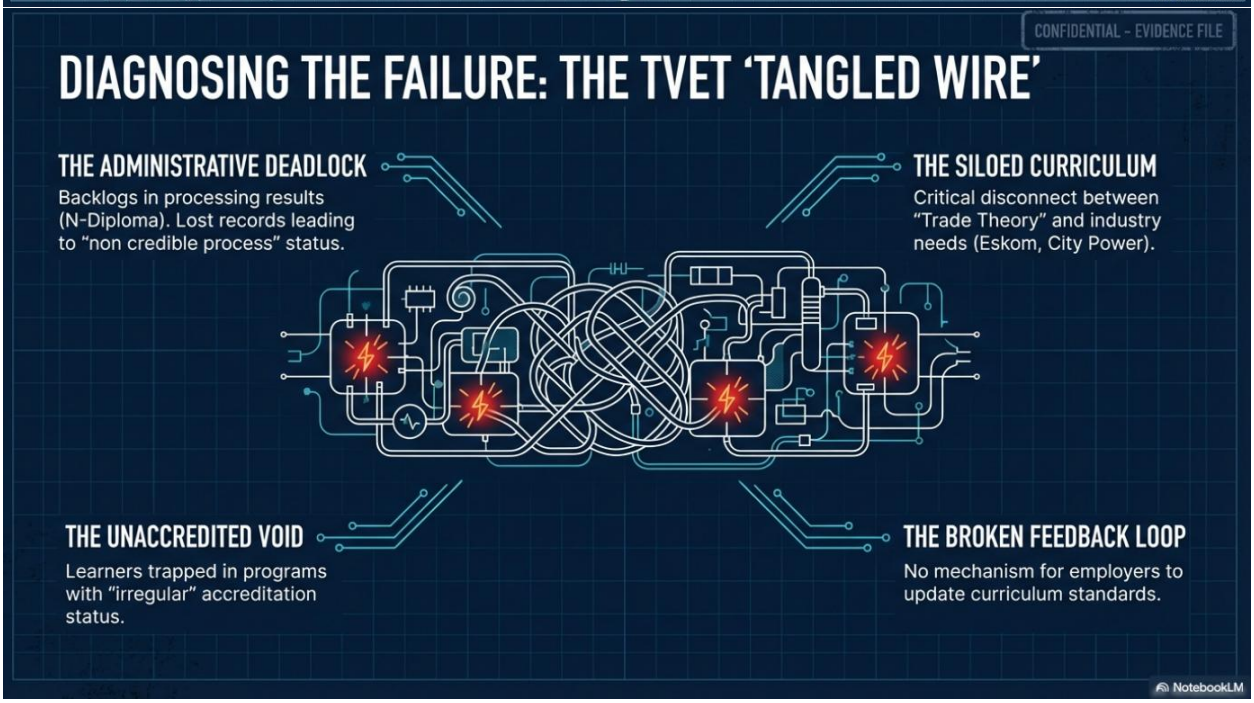

AGILE PROJECT MANAGEMENT & DEVOPS
BACKLOG
ACTIVE
RESOLVED
CLOSED
Work Item
TA
Crime Management Research
Engineering NATED - Thesis Master
Visual Basic ATM Project
Student Registration System
NotebookLM

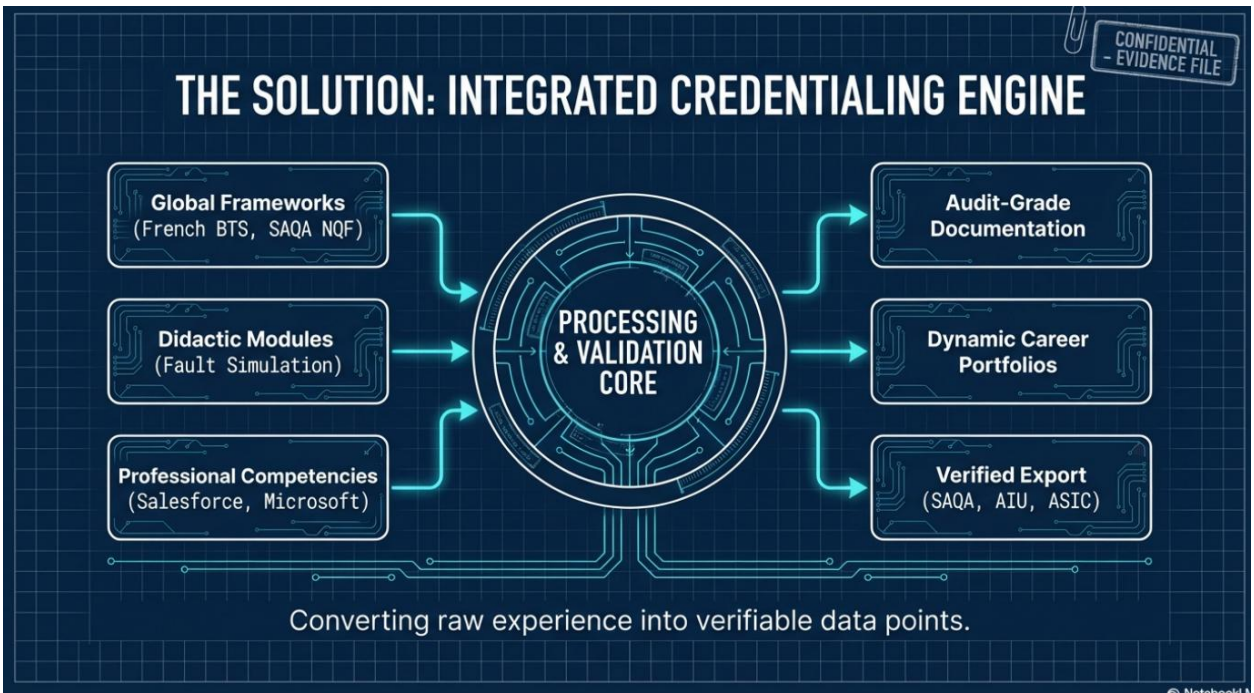

PROFESSIONAL TIMELINE & QUALIFICATIONS
2010–2015
JetBrains Mono
2015–2020
JetBrains Mono
2020–2025
JetBrains Mono
SECURITY OPERATIONS
Nogada SA, Section One. Operational security & asset protection.
LEGAL & REGULATORY
CCMA Reviews, Labour Court Appeals (JA 37/19), Self-Representation.
ENGINEERING & TECH
St Peace College, Microsoft Azure Certs, Engineering Studies (NATED).
EDUCATION & CERTIFICATES
- National Certificates (Engineering)
- Schneider Electric Assessment Expert
- Eaton Security Engineering
- Microsoft Security & Azure Fundamentals
NotebookLM

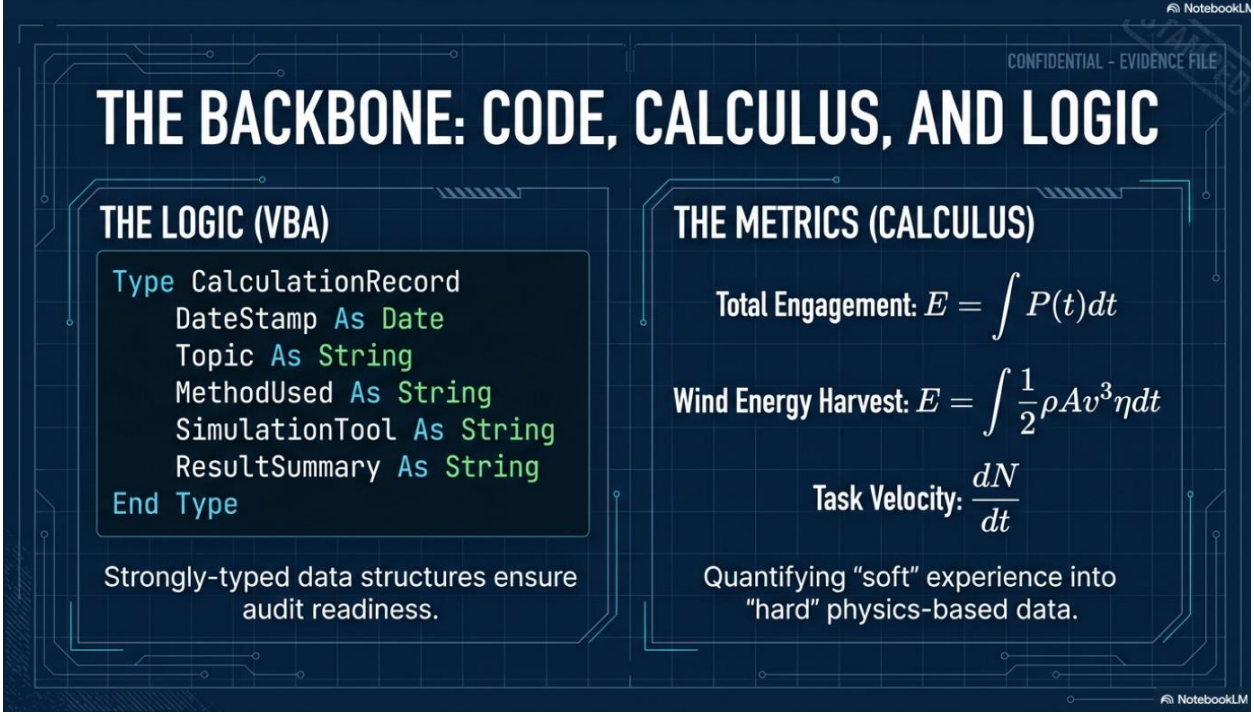

READY FOR DEPLOYMENT
Technical Security | Systems Engineering | Labour Relations
A unique candidate combining the discipline of a security officer, the logic of a software engineer, and the procedural rigor of a legal professional.
CONTACT
Phone:
072 529 8946
Email:
tshingombefiston@gmail.com
Location:
Johannesburg, Gauteng
(Hillbrow/Berea)
Available for roles in Systems Engineering, PLC Automation, and Security Operations Management.
NotebookLM

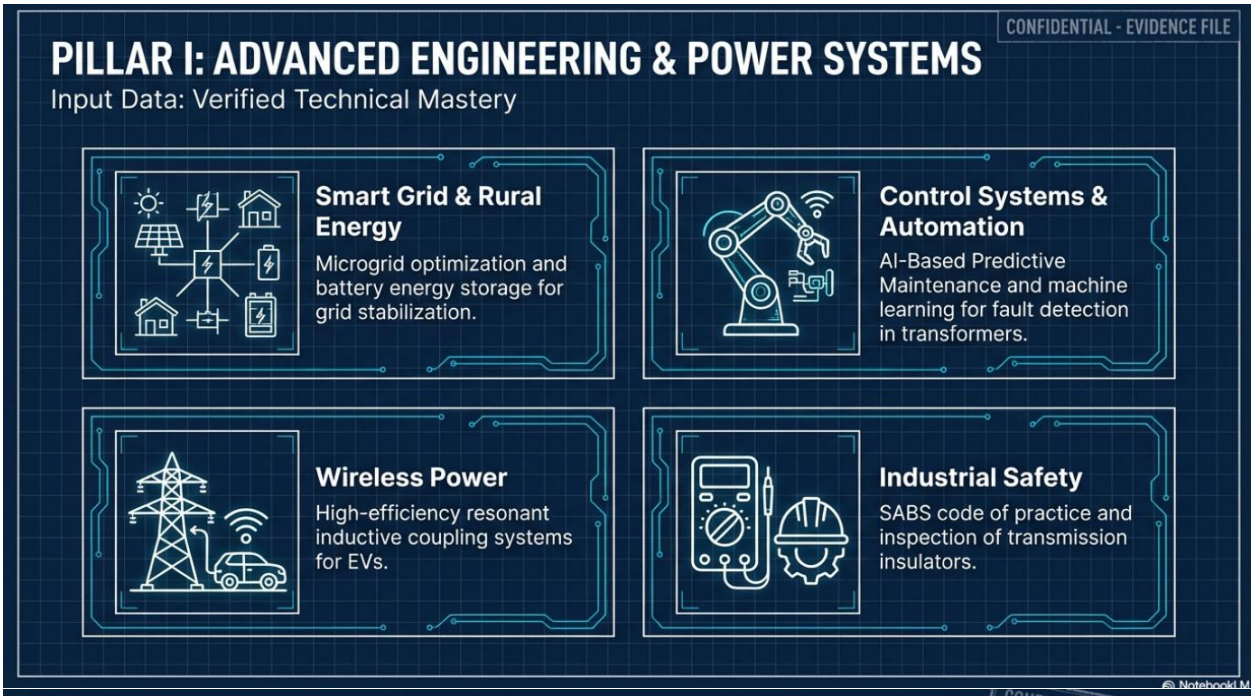

THE AUDIT-GRADE CAREER ENGINE
A Unified Framework for Verifiable Competence, Engineering Innovation, and Systemic Reform
VERIFIED
CONFIDENTIAL
ENGINEERING BLUEPRINT
PROJECT REF: TSHITADI DOSSIER // USERFORM14 // TECH REPORT 2025
STATUS: READY FOR DEPLOYMENT
NotebookLM

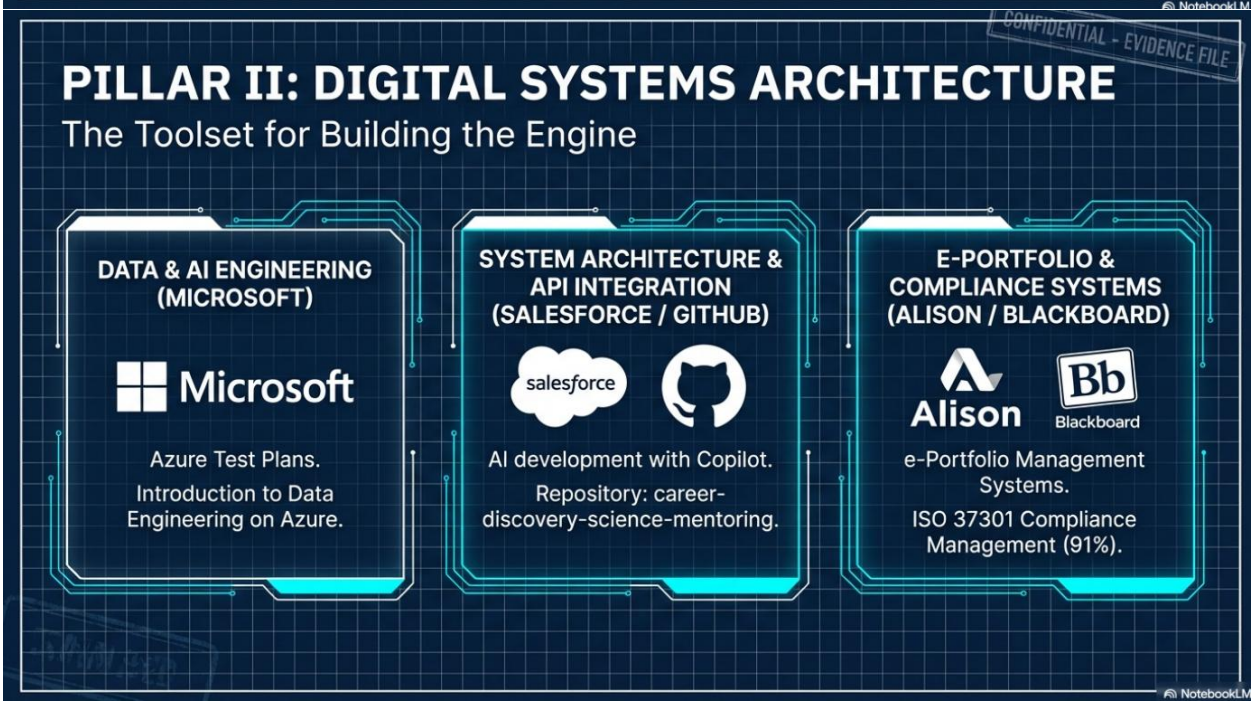

CONFIDENTIAL - EVIDENCE FILE
THE PARADOX:
PROLIFIC OUTPUT VS. SYSTEMIC FRICTION
THE FRICTION
NSF I-Corps (Feb 14, 2025)
Application declined... core technology needs to have been developed at an accredited institution.
REJECTED
CONFIDENTIAL
DHET
Status: Irregularity detected... slow to challenge factor learning.
IRREGULARITY DETECTED
Case Closed:
Your complaint does not fall within my mandate.
CASE CLOSED
THE OUTPUT
+12V
GND
15pF
SIGNAL PROCESSOR UNIT
2.4 GHz RF
HIGH FREQUENCY OUTPUT
PARALLEL TRACK: GLOBAL PLATFORMS (GITHUB, ALISON, INTERNET ARCHIVE)
NotebookLM

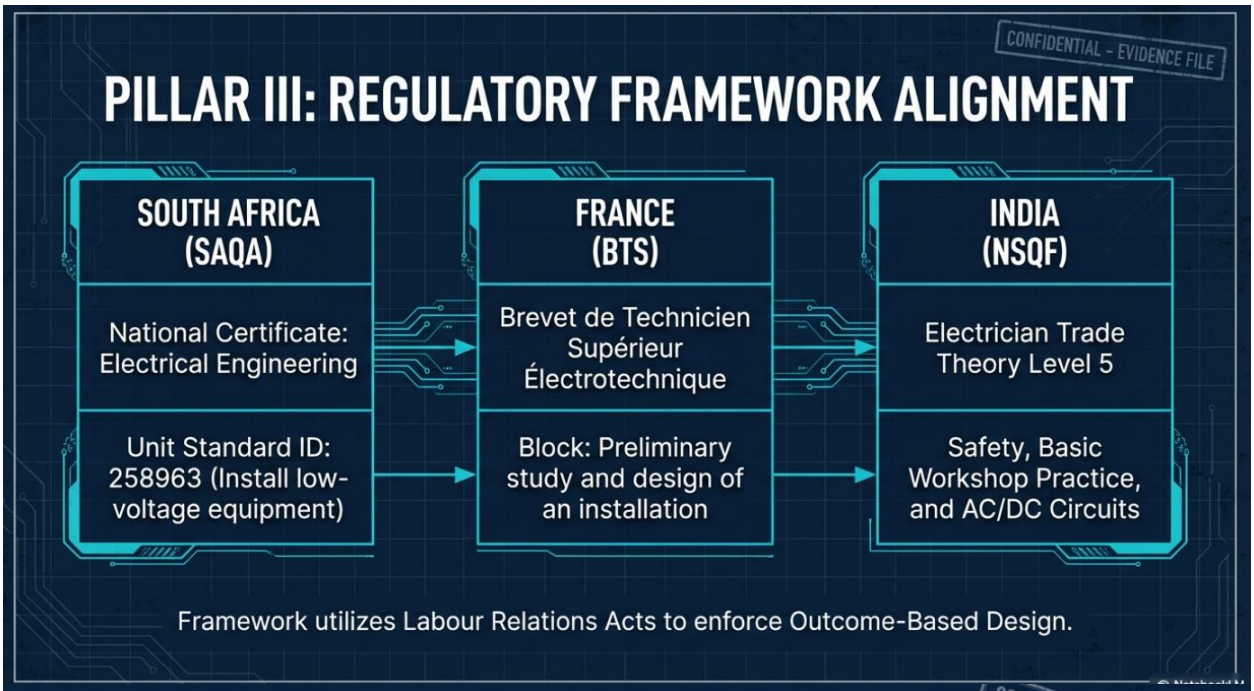

CONFIDENTIAL - EVIDENCE FILE
DIAGNOSING THE FAILURE: THE TVET 'TANGLED WIRE'
THE ADMINISTRATIVE DEADLOCK
Backlogs in processing results (N-Diploma). Lost records leading to "non credible process" status.
THE SILOED CURRICULUM
Critical disconnect between "Trade Theory" and industry needs (Eskom, City Power).
THE UNACCREDITED VOID
Learners trapped in programs with "irregular" accreditation status.
THE BROKEN FEEDBACK LOOP
No mechanism for employers to update curriculum standards.
NotebookLM

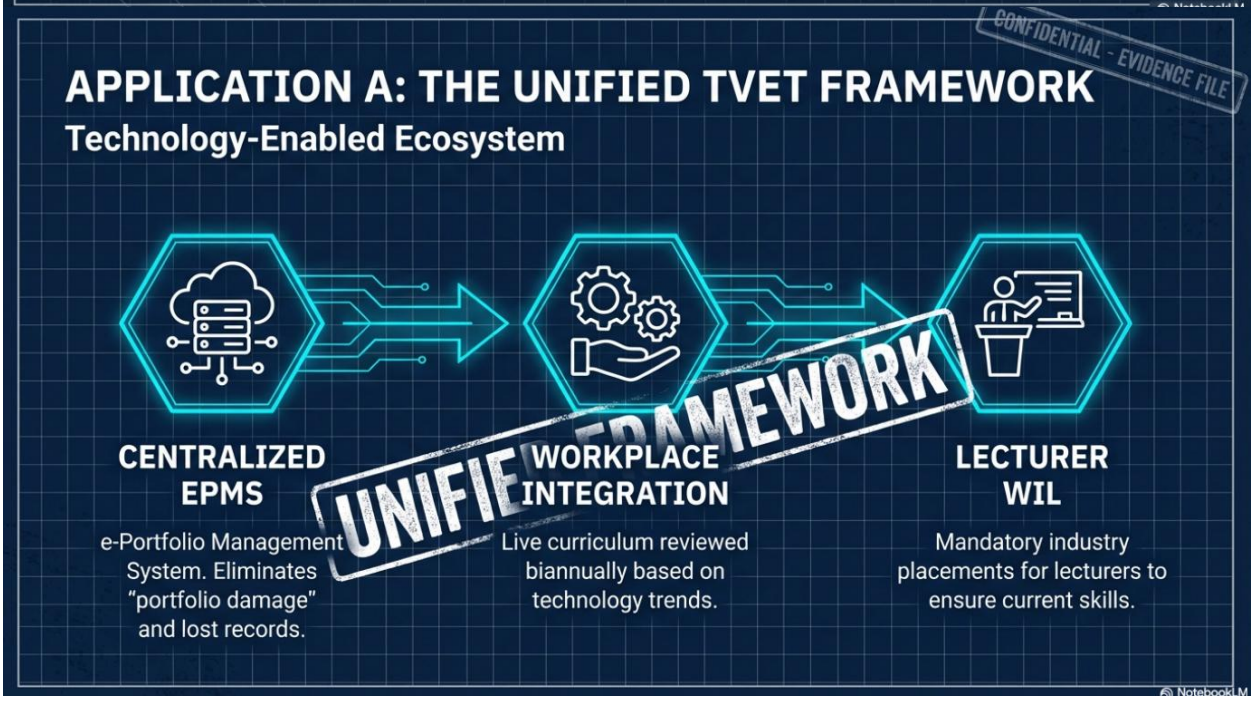

CONFIDENTIAL - EVIDENCE FILE
THE SOLUTION: INTEGRATED CREDENTIALING ENGINE
Global Frameworks
(French BTS, SAQA NQF)
Didactic Modules
(Fault Simulation)
Professional Competencies
(Salesforce, Microsoft)
PROCESSING & VALIDATION CORE
Audit-Grade Documentation
Dynamic Career Portfolios
Verified Export
(SAQA, AIU, ASIC)
Converting raw experience into verifiable data points.
NotebookLM

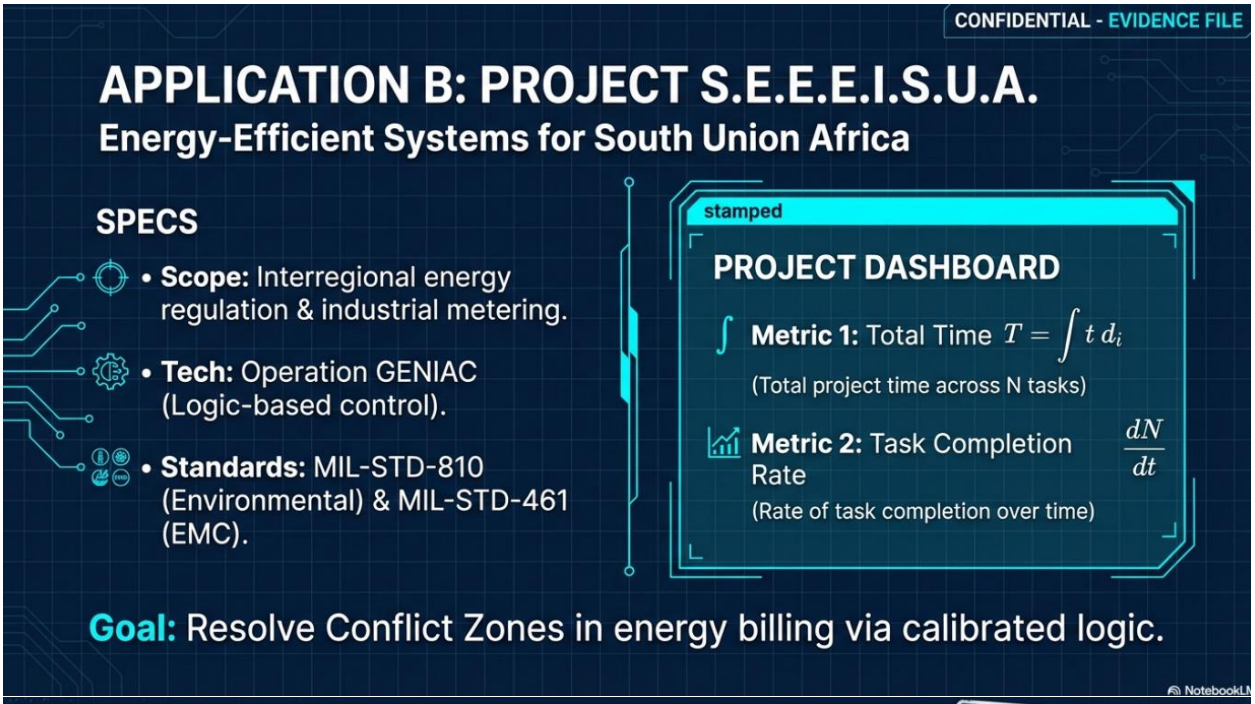

CONFIDENTIAL - EVIDENCE FILE
THE BACKBONE: CODE, CALCULUS, AND LOGIC
THE LOGIC (VBA)
Type CalculationRecord
DateStamp As Date
Topic As String
MethodUsed As String
SimulationTool As String
ResultSummary As String
End Type
Strongly-typed data structures ensure audit readiness.
THE METRICS (CALCULUS)
Total Engagement: $E = \int P(t)dt$
Wind Energy Harvest: $E = \int \frac{1}{2}\rho A v^3 \eta dt$
Task Velocity: $\frac{dN}{dt}$
Quantifying "soft" experience into "hard" physics-based data.
NotebookLM

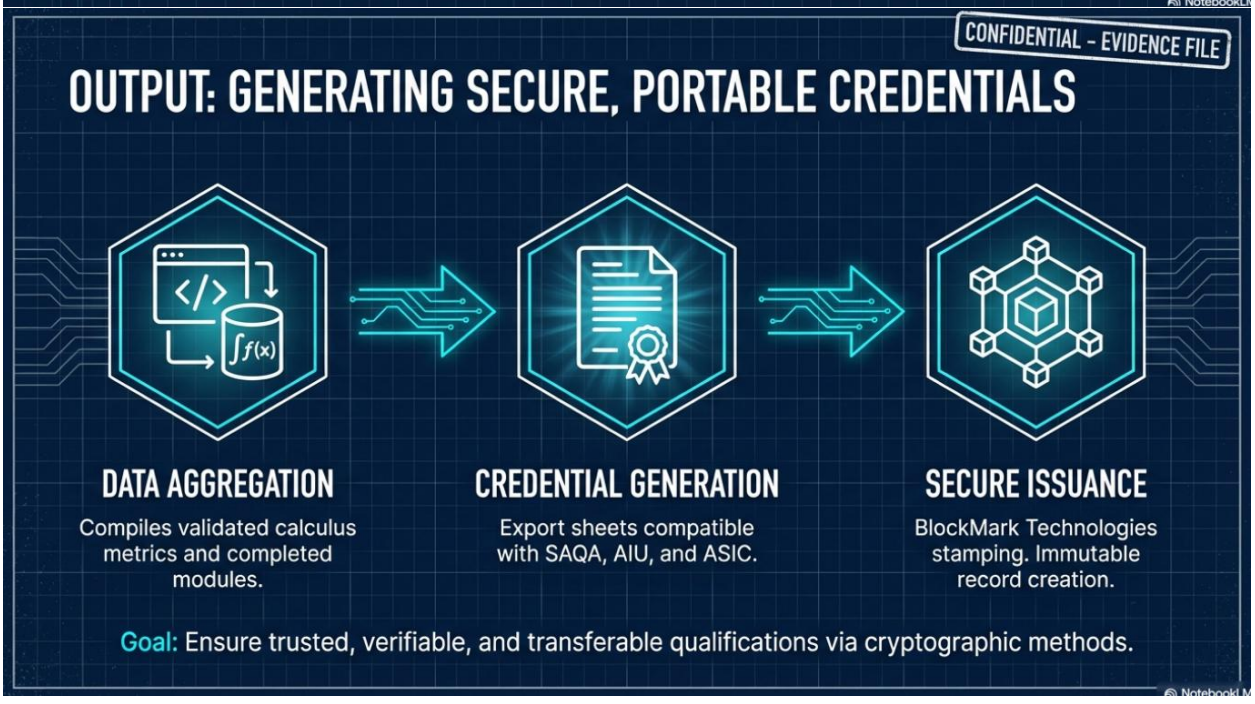

CONFIDENTIAL - EVIDENCE FILE
PILLAR I: ADVANCED ENGINEERING & POWER SYSTEMS
Input Data: Verified Technical Mastery
Smart Grid & Rural Energy
Microgrid optimization and battery energy storage for grid stabilization.
Control Systems & Automation
AI-Based Predictive Maintenance and machine learning for fault detection in transformers.
Wireless Power
High-efficiency resonant inductive coupling systems for EVs.
Industrial Safety
SABS code of practice and inspection of transmission insulators.


CONFIDENTIAL - EVIDENCE FILE
PILLAR II: DIGITAL SYSTEMS ARCHITECTURE
The Toolset for Building the Engine
DATA & AI ENGINEERING (MICROSOFT)
Microsoft
Azure Test Plans.
Introduction to Data Engineering on Azure.
SYSTEM ARCHITECTURE & API INTEGRATION (SALESFORCE / GITHUB)
salesforce
AI development with Copilot.
Repository: career-discovery-science-mentoring.
E-PORTFOLIO & COMPLIANCE SYSTEMS (ALISON / BLACKBOARD)
Alison
Bb
Blackboard
e-Portfolio Management Systems.
ISO 37301 Compliance Management (91%).

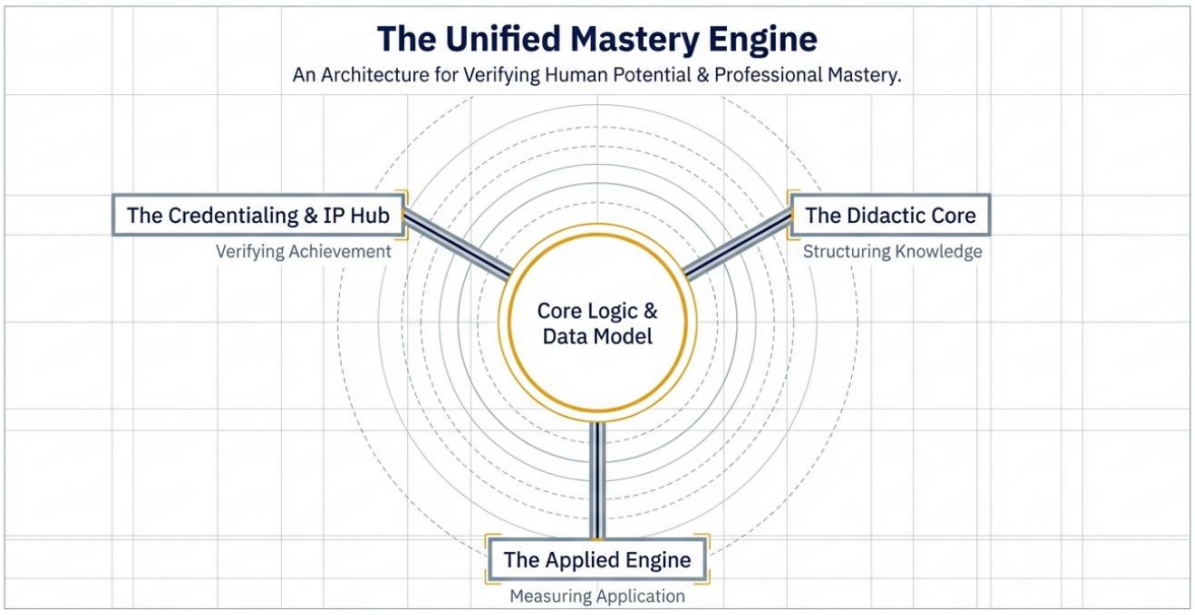

CONFIDENTIAL - EVIDENCE FILE
PILLAR III: REGULATORY FRAMEWORK ALIGNMENT
SOUTH AFRICA (SAQA)
National Certificate: Electrical Engineering
Unit Standard ID: 258963 (Install low-voltage equipment)
FRANCE (BTS)
Brevet de Technicien Supérieur Électrotechnique
Block: Preliminary study and design of an installation
INDIA (NSQF)
Electrician Trade Theory Level 5
Safety, Basic Workshop Practice, and AC/DC Circuits
Framework utilizes Labour Relations Acts to enforce Outcome-Based Design.


CONFIDENTIAL - EVIDENCE FILE
APPLICATION A: THE UNIFIED TVET FRAMEWORK
Technology-Enabled Ecosystem
CENTRALIZED EPMS
e-Portfolio Management System. Eliminates "portfolio damage" and lost records.
WORKPLACE INTEGRATION
Live curriculum reviewed biannually based on technology trends.
LECTURER WIL
Mandatory industry placements for lecturers to ensure current skills.
UNIFIED FRAMEWORK


CONFIDENTIAL - EVIDENCE FILE
APPLICATION B: PROJECT S.E.E.E.I.S.U.A.
Energy-Efficient Systems for South Union Africa
SPECS
• Scope: Interregional energy regulation & industrial metering.
• Tech: Operation GENIAC (Logic-based control).
• Standards: MIL-STD-810 (Environmental) & MIL-STD-461 (EMC).
stamped
PROJECT DASHBOARD
Metric 1: Total Time $T = \int t\, d_i$
(Total project time across N tasks)
Metric 2: Task Completion Rate $\frac{dN}{dt}$
(Rate of task completion over time)
Goal: Resolve Conflict Zones in energy billing via calibrated logic.


CONFIDENTIAL - EVIDENCE FILE
OUTPUT: GENERATING SECURE, PORTABLE CREDENTIALS
DATA AGGREGATION
Compiles validated calculus metrics and completed modules.
CREDENTIAL GENERATION
Export sheets compatible with SAQA, AIU, and ASIC.
SECURE ISSUANCE
BlockMark Technologies stamping. Immutable record creation.
Goal: Ensure trusted, verifiable, and transferable qualifications via cryptographic methods.

stamped
CONFIDENTIAL - EVIDENCE FILE
A NEW PARADIGM
OLD PARADIGM
Static Resumes
Siloed Databases
Lost Records
Bureaucratic Friction
THE CAREER ENGINE
INTEGRATED MASTERY
Dynamic Data Systems
Cross-Domain Mapping
Automated Verification
Audit-Grade Traceability
NotebookLM
ENGAGE THE EXPERTISE.
CONFIDENTIAL - EVIDENCE FILE
AUDITED & APPROVED
ARCHITECT: TSHINGOMBE TSHITADI FISTON
ROLE: National-grade Curriculum Architect & Compliance Strategist
PROFILE: Internet Archive / GitHub
The challenge is no longer one of validation, but of recognition.
The work stands on its own merit.
NotebookLM



An integrated system for structuring knowledge, verifying application, and managing a lifelong professional portfolio.
We are moving from static CVs to dynamic, audit-grade ledgers of human capability.

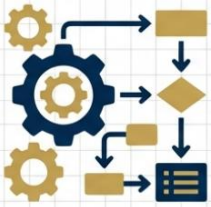
NotebookLM

The Architecture of Verified Potential

Professional development is currently fragmented across loose certificates and forgotten projects. This engine connects structured learning with practical application, culminating in verifiable assets.

Pillar 1: The Didactic Core

How knowledge is structured and acquired through a library of modular, cross-disciplinary curricula.



Pillar 2: The Applied Engine

How knowledge is applied and measured through project-based work, simulations, and quantitative analysis.

Pillar 3: The Credentialing & IP Hub

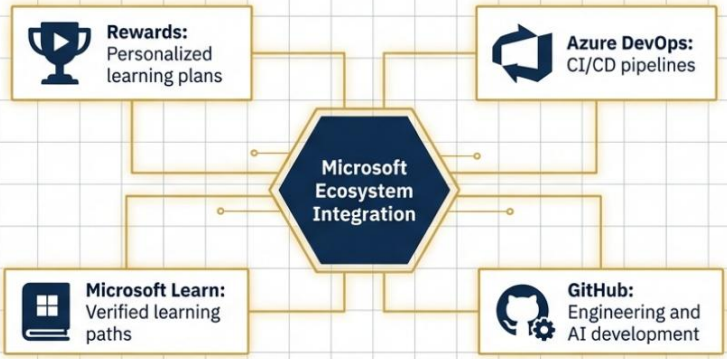
How achievement is verified through national frameworks, blockchain certificates, and a structured patent lifecycle.

NotebookLM

The Professional Profile: Tshingombe Tshitadi

A case study in multi-disciplinary career tracking.

Name: Tshingombe Tshitadi
Current Band/Rank: Detective Inspector
Employee number: 23456788 Metropolitan Police Application
Education Track: Electrical Engineering (NQF Level 3) at St. Peace College


Rewards: Personalized learning plans
Azure DevOps: CI/CD pipelines
Microsoft Ecosystem Integration
Microsoft Learn: Verified learning paths
GitHub: Engineering and AI development

NotebookLM

Pillar 1: The Didactic Core

Transforming raw vocational inputs into structured competency modules.

Raw Input Data

IBM Plex Sans Deep Navy Blue

Module 1: Electronic Practice

Module 2: Control Panel Wiring

Module 3: AC/DC Motor Drives

Module 7: Circuit Breakers and Relays

MASTERS-LEVEL CURRICULUM

Renewable Energy

Wind Energy: Understanding the Technology and Integration. Solar Energy: Exploring Photovoltaic Systems.

MASTERS-LEVEL CURRICULUM

Supply Chain Management

Focus on flow of goods, information, and finances from origin to consumer.

MASTERS-LEVEL CURRICULUM

Spatial Computing

Spatial Computing in Telecommunications utilizing GIS, LBS, and remote sensing.

MASTERS-LEVEL CURRICULUM

Genetic Engineering

Biopharmaceutical Manufacturing. Focus on fermentation technology, scale-up, and quality control.

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Quantifying Mastery: The Mathematical Baseline

The Engine embeds fundamental physics and calculus directly into the curriculum modules.

Wind Energy - Integral Calculations

Total Power Output

$$P_{total} = \int_0^T P(t)dt$$

Energy Harvested

$$E = \int_0^T \frac{1}{2}\rho A v^3 \eta dt$$

ρ = Air Density
η = Efficiency

Solar Energy - Integral Calculations

Total Energy Generated

$$E_{total} = \int_0^T P(t)dt$$

Social Media Marketing (Cross-disciplinary)

Total Engagement

$$E_{total} = \int_0^T E(t)dt$$

Demonstrates the extensibility of the mathematical model to non-engineering domains.

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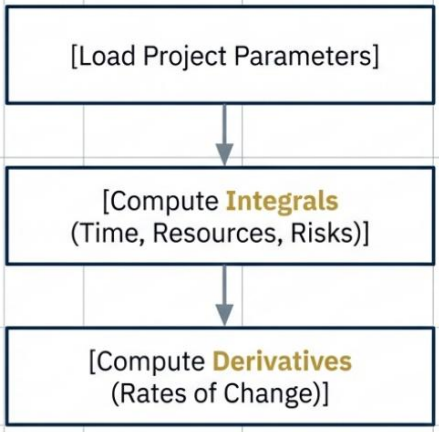
Pillar 2: The Applied Engine

Translating didactic learning into measurable application and cost projection.



Project Planning

Total Time: $T = \int_0^N t_i di$

Resource Management

Total Consumption: $R = \int_0^T r(t)dt$

Cost Projection

Total Cost: $C_{\text{total}} = \sum (M_{\text{material}} + H_{\text{human}} + S_{\text{stationery}} + B_{\text{building}})$

Real-World Context: Applies to Tshingombe's task: "Erect overhead domestic service line".

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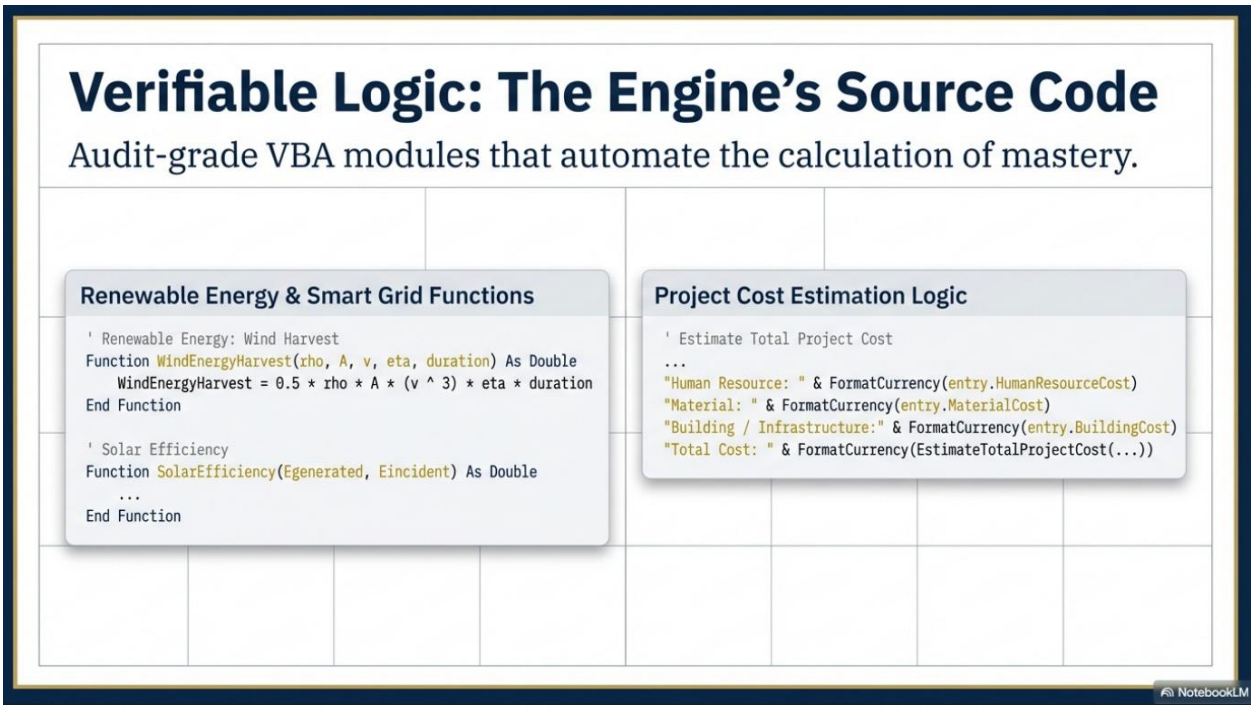
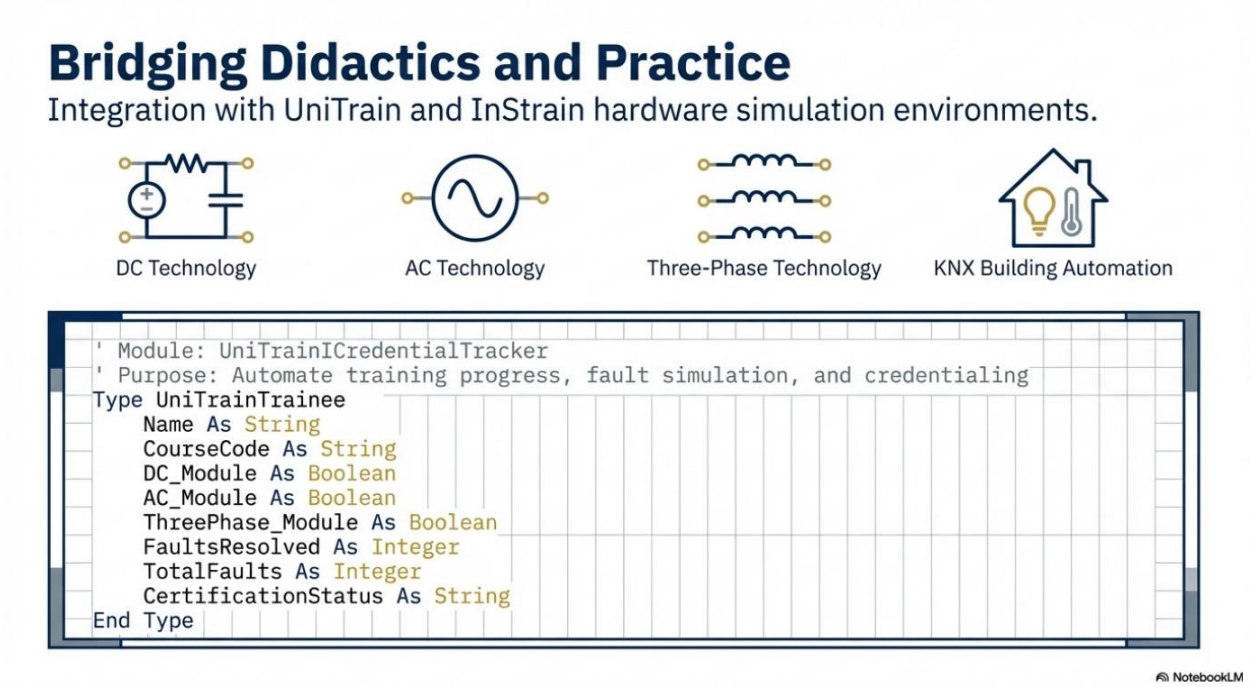
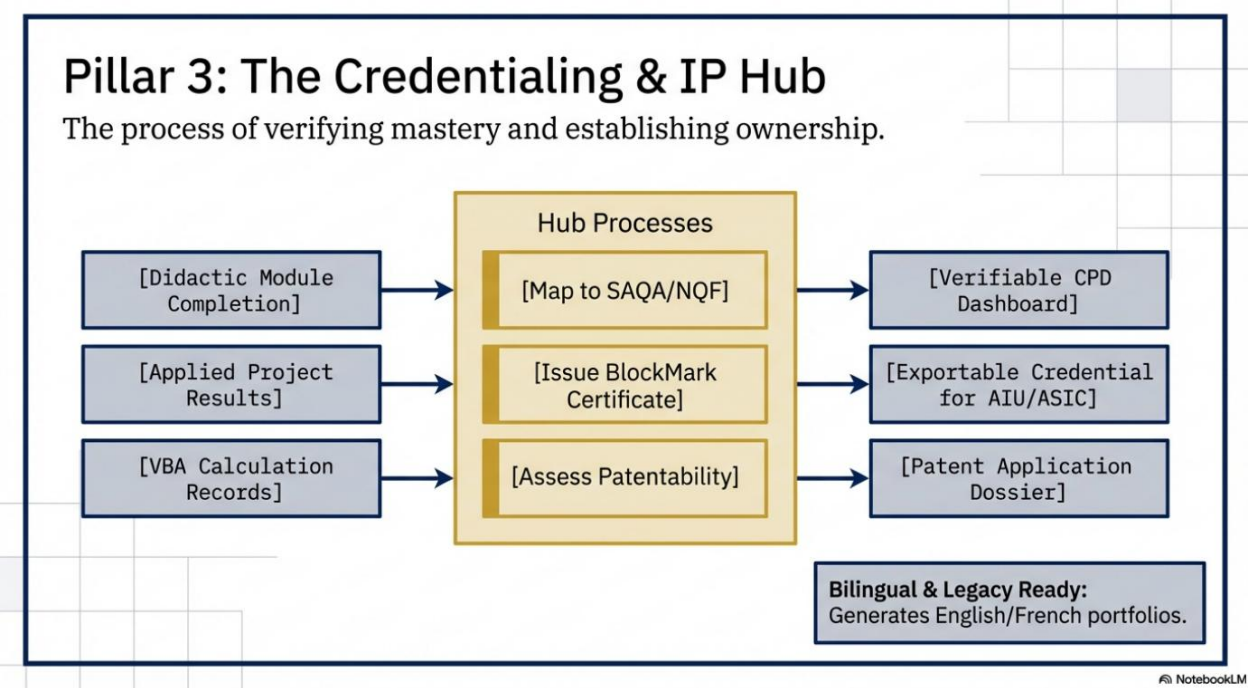

Verifiable Logic: The Engine's Source Code
Audit-grade VBA modules that automate the calculation of mastery.
Renewable Energy & Smart Grid Functions
' Renewable Energy: Wind Harvest
Function WindEnergyHarvest(rho, A, v, eta, duration) As Double
WindEnergyHarvest = 0.5 * rho * A * (v ^ 3) * eta * duration
End Function
' Solar Efficiency
Function SolarEfficiency(Egenerated, Eincident) As Double
...
End Function
Project Cost Estimation Logic
' Estimate Total Project Cost
...
"Human Resource: " & FormatCurrency(entry.HumanResourceCost)
"Material: " & FormatCurrency(entry.MaterialCost)
"Building / Infrastructure:" & FormatCurrency(entry.BuildingCost)
"Total Cost: " & FormatCurrency(EstimateTotalProjectCost(...))
NotebookLM


Bridging Didactics and Practice
Integration with UniTrain and InStrain hardware simulation environments.
DC Technology
AC Technology
Three-Phase Technology
KNX Building Automation
' Module: UniTrainICredentialTracker
' Purpose: Automate training progress, fault simulation, and credentialing
Type UniTrainTrainee
Name As String
CourseCode As String
DC_Module As Boolean
AC_Module As Boolean
ThreePhase_Module As Boolean
FaultsResolved As Integer
TotalFaults As Integer
CertificationStatus As String
End Type
NotebookLM



Compliance by Design: National Standards Alignment

Mapping the user's vocational data to the South African Qualifications Authority (SAQA) framework.

SAQA ID 63790: National Certificate: Electrical Engineering (NQF Level 3, 133 Credits)

Component	Unit Standard ID	Title	Credits
Core	258963	Install, test and maintain electrical equipment in a hazardous location	10
Core	113924	Install and commission DC and AC machines and control gear	10
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	5
Elective	259097	Carry out a detailed inspection and repair defects on explosion prevention apparatus	6

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From Research to Asset: Patent Lifecycle

Programmatic assessment of intellectual property potential.

Patentability Criteria

1. Novelty: Not publicly disclosed before filing.

2. Utility: Must function and serve a useful purpose.

3. Inventive Step: Not obvious to a skilled professional in the field.

VBA Logic for Patent Tracking

```
' Module: Research and Patent Lifecycle Tracker
Type ResearchPatentProject
    ProjectID As String
    ScopeDefined As Boolean
    MethodologySet As Boolean
    PatentNovelty As Boolean
    PatentUtility As Boolean
    PatentInventiveStep As Boolean
    PatentFiled As Boolean
    CertificationStatus As String
End Type
```

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Immutable Verification: Blockchain Integration

Secure, third-party verification via BlockMark Technologies.

Item	Price (credits)	Paid for by
Issue a certificate with an expiry date	£1 (100) per year	Issuer
Issue a non-expiring certificate	£10 (1000)	Issuer
Issue a CPD folder with a certificate	£1 (100) per year	Issuer
Stamp a hash of an issued certificate on blockchain	£1 (100)*	Issuer

*Coming soon (currently beta-testing with no charge)

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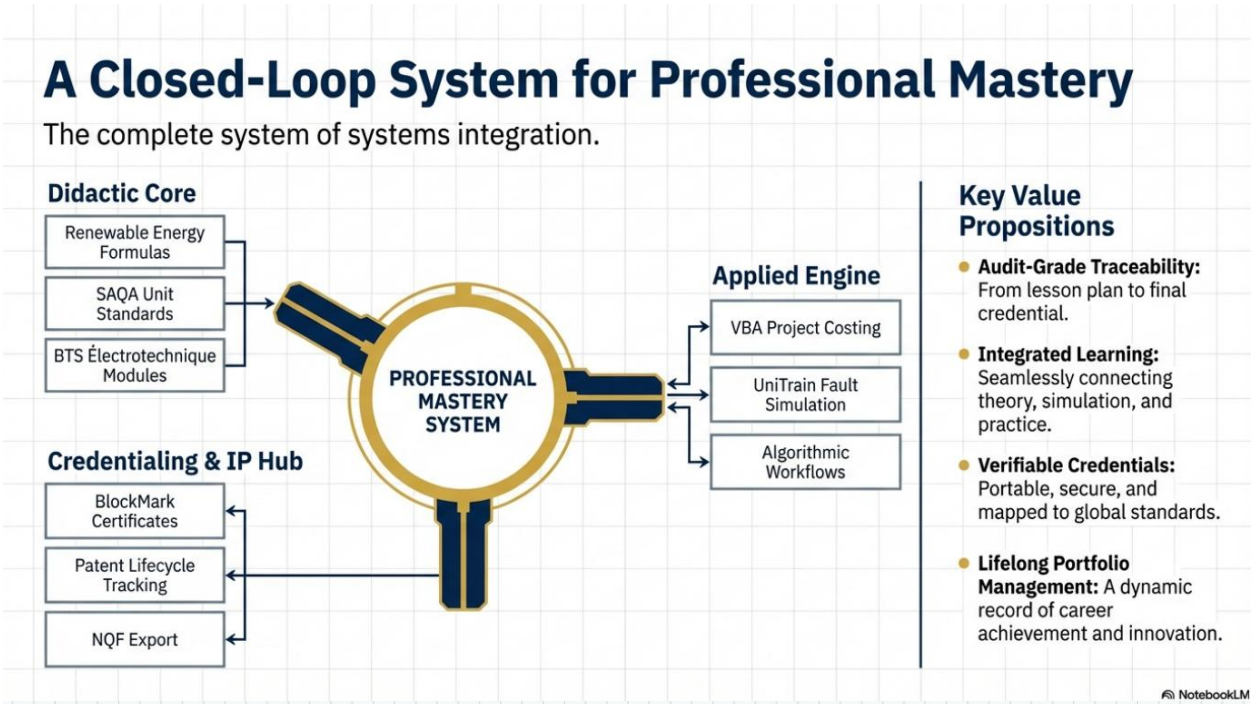
A Closed-Loop System for Professional Mastery
The complete system of systems integration.
Didactic Core
Renewable Energy Formulas
SAQA Unit Standards
BTS Électrotechnique Modules
PROFESSIONAL MASTERY SYSTEM
Applied Engine
VBA Project Costing
UniTrain Fault Simulation
Algorithmic Workflows
Credentialing & IP Hub
BlockMark Certificates
Patent Lifecycle Tracking
NQF Export
Key Value Propositions
Audit-Grade Traceability: From lesson plan to final credential.
Integrated Learning: Seamlessly connecting theory, simulation, and practice.
Verifiable Credentials: Portable, secure, and mapped to global standards.
Lifelong Portfolio Management: A dynamic record of career achievement and innovation.
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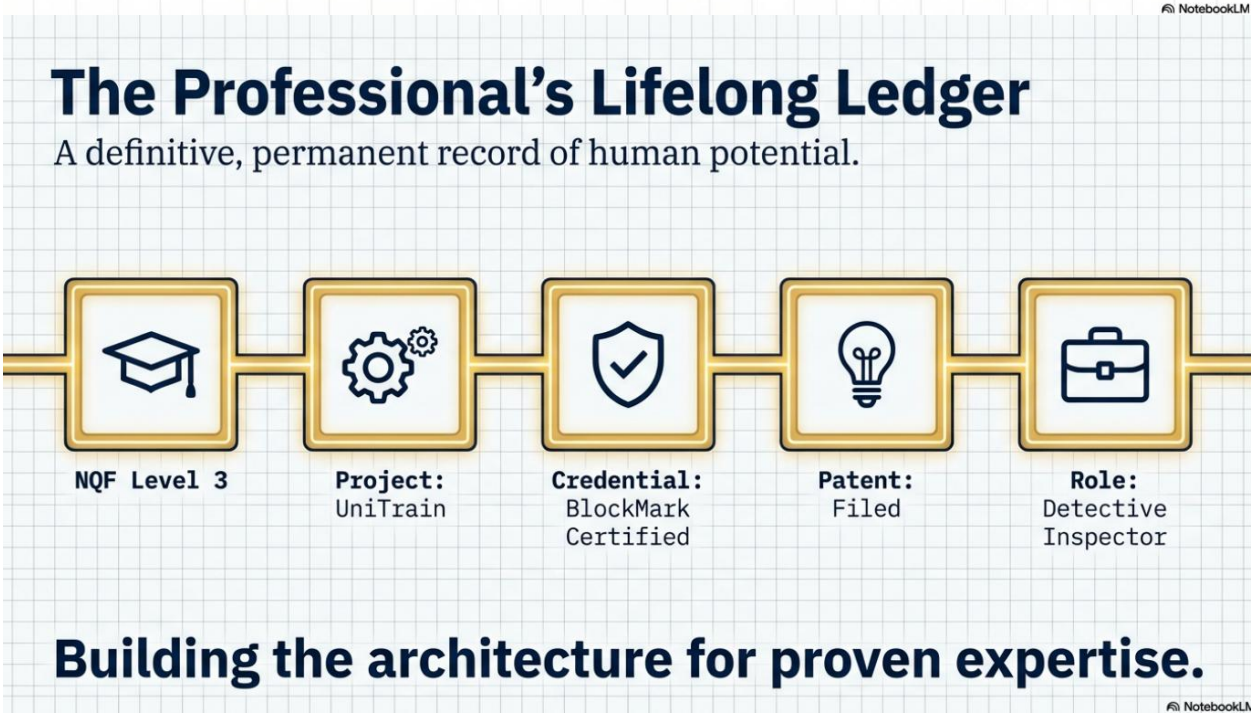

The Professional's Lifelong Ledger
A definitive, permanent record of human potential.
NQF Level 3
Project: UniTrain
Credential: BlockMark Certified
Patent: Filed
Role: Detective Inspector
Building the architecture for proven expertise.
NotebookLM

Master Practical AI: The DL AI-2.0 Didactic Laboratory

A comprehensive hardware and software platform for students and engineers, using challenge-based learning to bridge theory and practice in AI for Industry 4.0 applications.

A COMPLETE AI LEARNING PLATFORM

Bridge the Gap Between Theory and Practice

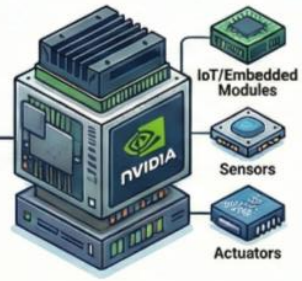
Train Up to 20 Students Simultaneously

3 students work on hardware, while 17 more connect to the server.

Designed for a Range of Disciplines

Ideal for AI, Automation, Software, Mechatronics, and IT engineering programs.

INTEGRATED HARDWARE & SOFTWARE ECOSYSTEM



Powerful Hardware Modules

Industry-Standard Software Tools

Develop with essential tools like Python, TensorFlow, OpenCV, and MySQL.

Real-World Training Objectives

Machine Learning | **Neural Networks** | **Object Tracking** | **Pathfinding**

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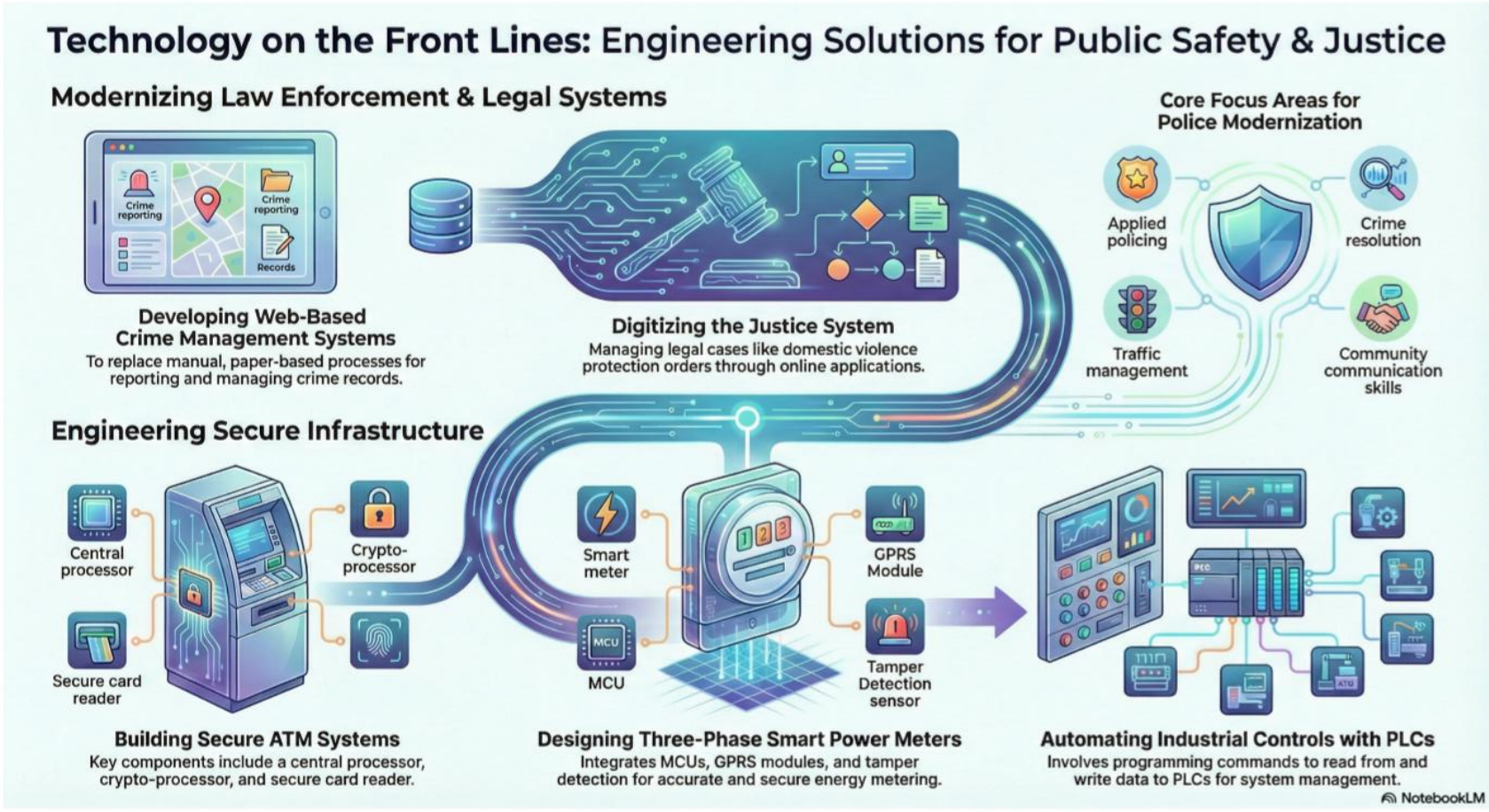
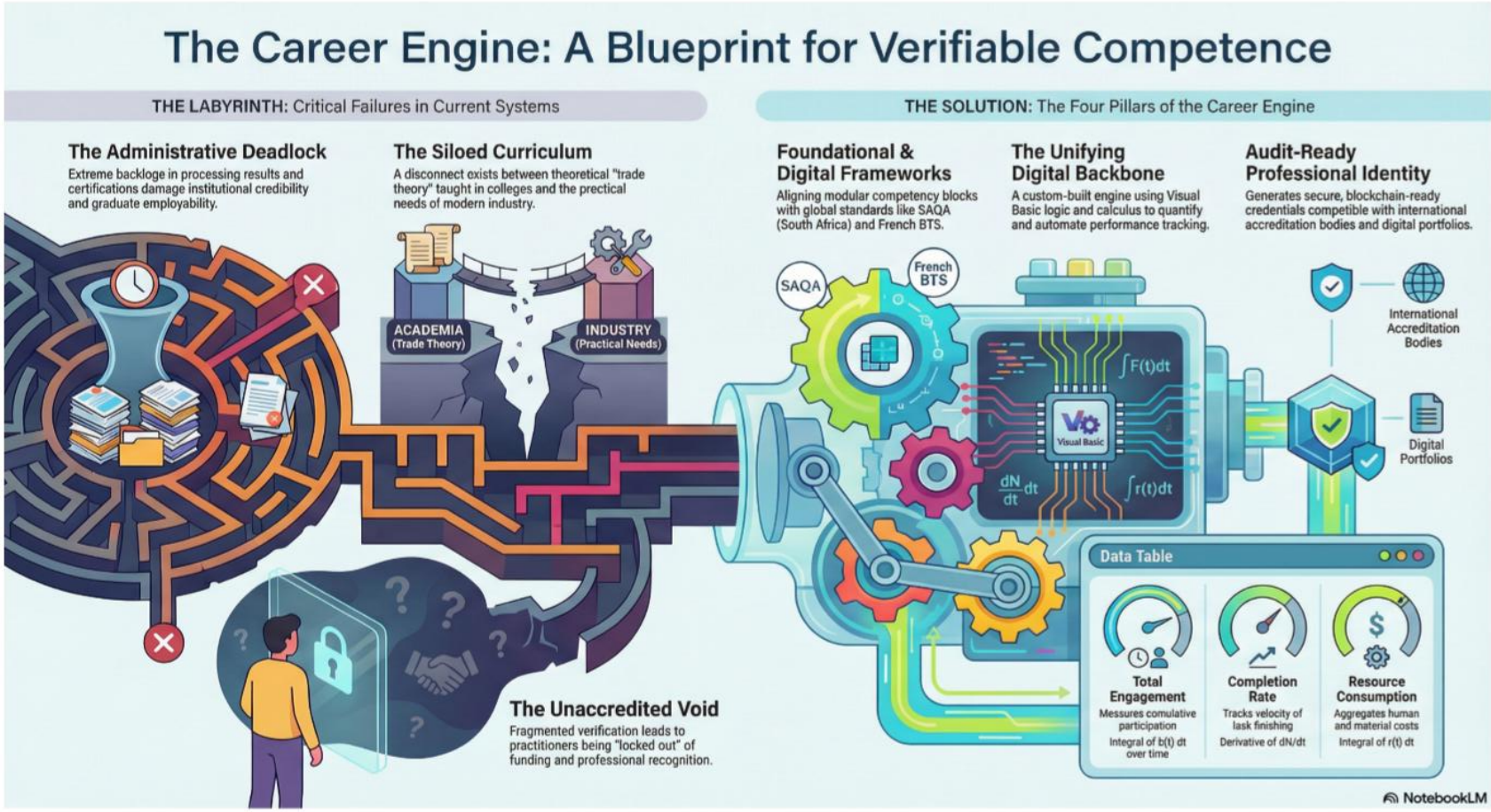

Technology on the Front Lines: Engineering Solutions for Public Safety & Justice
Modernizing Law Enforcement & Legal Systems
Crime reporting
Crime reporting
Records
Developing Web-Based Crime Management Systems
To replace manual, paper-based processes for reporting and managing crime records.
Digitizing the Justice System
Managing legal cases like domestic violence protection orders through online applications.
Core Focus Areas for Police Modernization
Applied policing
Crime resolution
Traffic management
Community communication skills
Engineering Secure Infrastructure
Central processor
Crypto-processor
Secure card reader
Building Secure ATM Systems
Key components include a central processor, crypto-processor, and secure card reader.
Smart meter
MCU
GPRS Module
Tamper Detection sensor
Designing Three-Phase Smart Power Meters
Integrates MCUs, GPRS modules, and tamper detection for accurate and secure energy metering.
Automating Industrial Controls with PLCs
Involves programming commands to read from and write data to PLCs for system management.
NotebookLM


The Career Engine: A Blueprint for Verifiable Competence
THE LABYRINTH: Critical Failures in Current Systems
THE SOLUTION: The Four Pillars of the Career Engine
The Administrative Deadlock
Extreme backloge in processing results and certifications damage institutional credibility and graduate employability.
The Siloed Curriculum
A disconnect exists between theoretical "trade theory" taught in colleges and the prectical needs of modern industry.
ACADEMIA (Trade Theory)
INDUSTRY (Practical Needs)
The Unaccredited Void
Fragmented verification leads to practitioners being "locked out" of funding and professional recognition.
Foundational & Digital Frameworks
Aligning modular competency blocks with global standards like SAQA (South Africa) and French BTS.
SAQA
French BTS
The Unifying Digital Backbone
A custom-built engine using Visual Basic logic and calculus to quantify and automate performance tracking.
Visual Basic
Audit-Ready Professional Identity
Generates secure, blockchain-ready credentials competible with international accreditation bodies and digital portfolios.
International Accreditation Bodies
Digital Portfolios
Data Table
Total Engagement
Messures comulative participation
Integral of b(t) dt over time
Completion Rate
Tracks velocity of lask finishing
Derivative of dN/dt
Resource Consumption
Aggregates human and material costs
Integral of r(t) dt
NotebookLM

Technology on the Front Lines: Engineering Solutions for Public Safety & Justice

Modernizing Law Enforcement & Legal Systems

Developing Web-Based Crime Management Systems

To replace manual, paper-based processes for reporting and managing crime records.

Digitizing the Justice System

Managing legal cases like domestic violence protection orders through online applications.

Core Focus Areas for Police Modernization

Engineering Secure Infrastructure

Building Secure ATM Systems

Key components include a central processor, crypto-processor, and secure card reader.

Designing Three-Phase Smart Power Meters

Integrates MCUs, GPRS modules, and tamper detection for accurate and secure energy metering.

Automating Industrial Controls with PLCs

Involves programming commands to read from and write data to PLCs for system management.

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